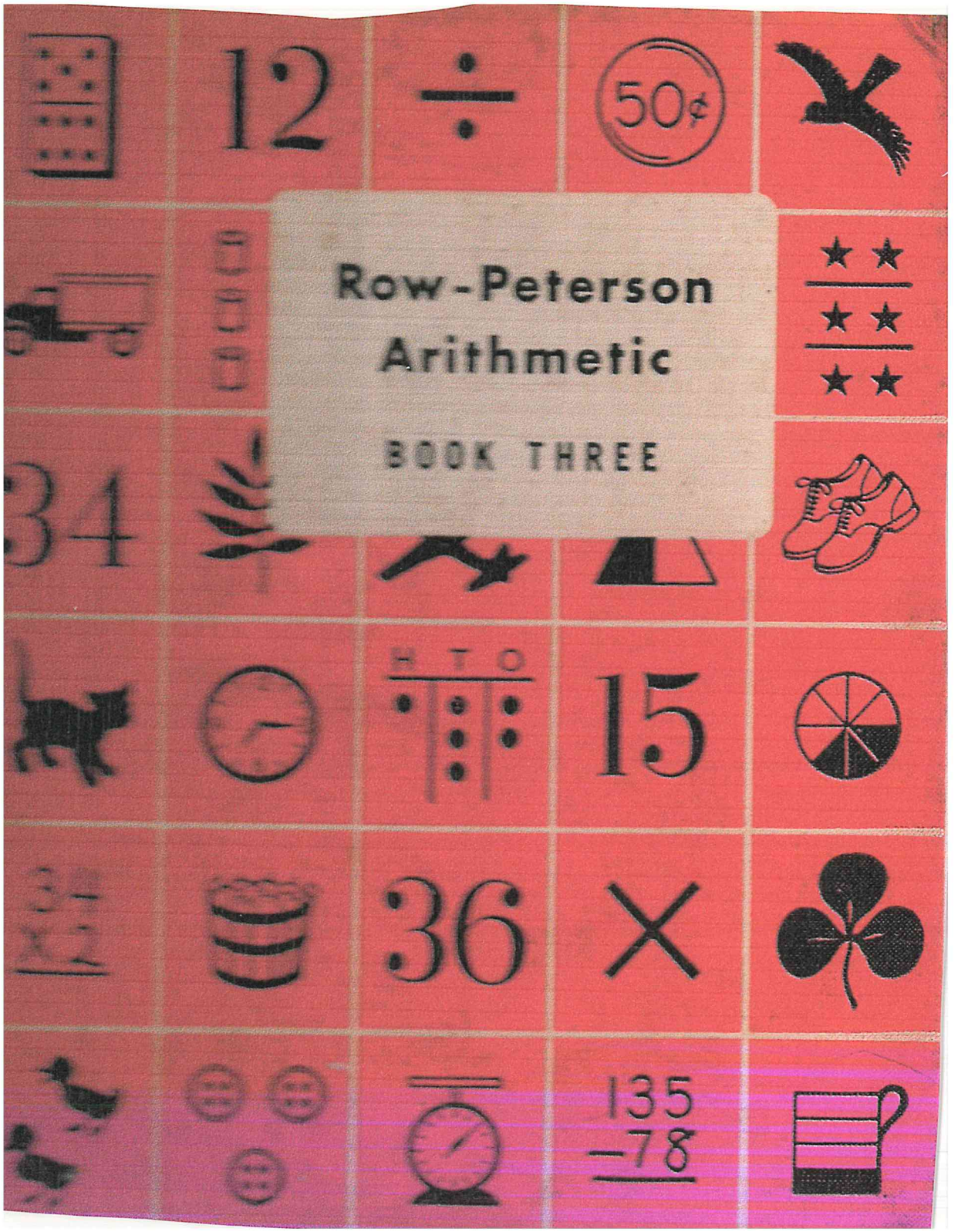

Row-Peterson Arithmetic

BOOK THREE

Row-Peterson Arithmetic

BOOK THREE

By

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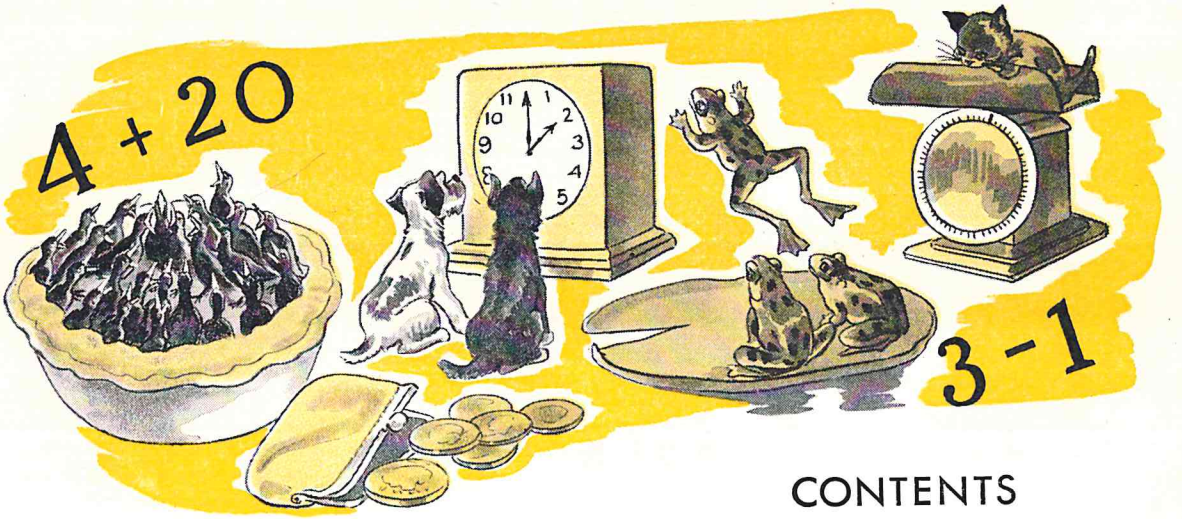

CONTENTS

1. Count and Compare 4
2. The Study of Groups 16
3. We Add and Subtract 24
4. Easy Additions and Subtractions . . . 36
5. We Solve Problems 52
6. The Teen Numbers 64
7. Harder Additions and Subtractions . . . 72
8. We Practice 90
9. The Idea of Ten 108
10. Money and Measures 118
11. Adding Tens 128
12. Subtracting Tens 138

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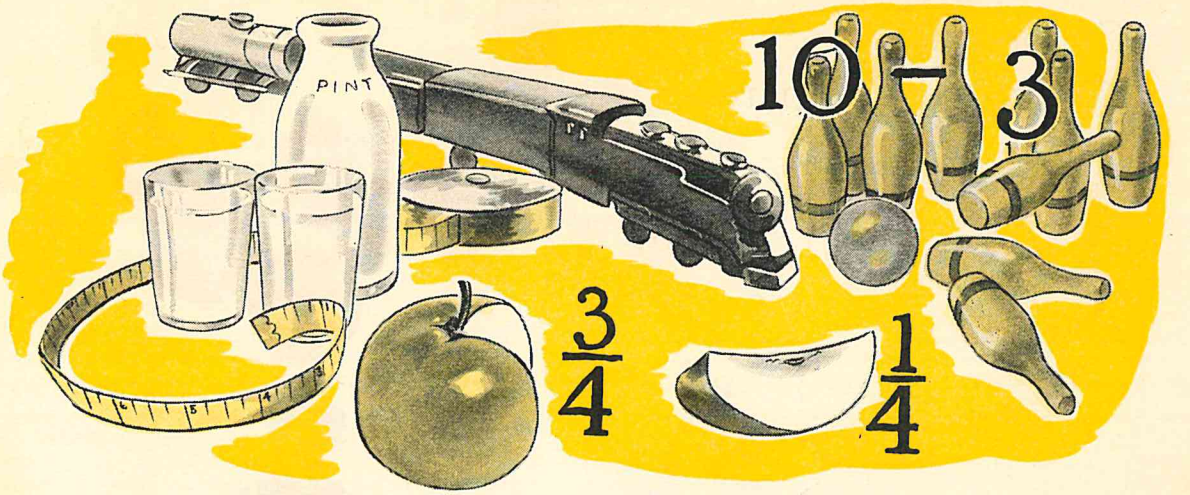
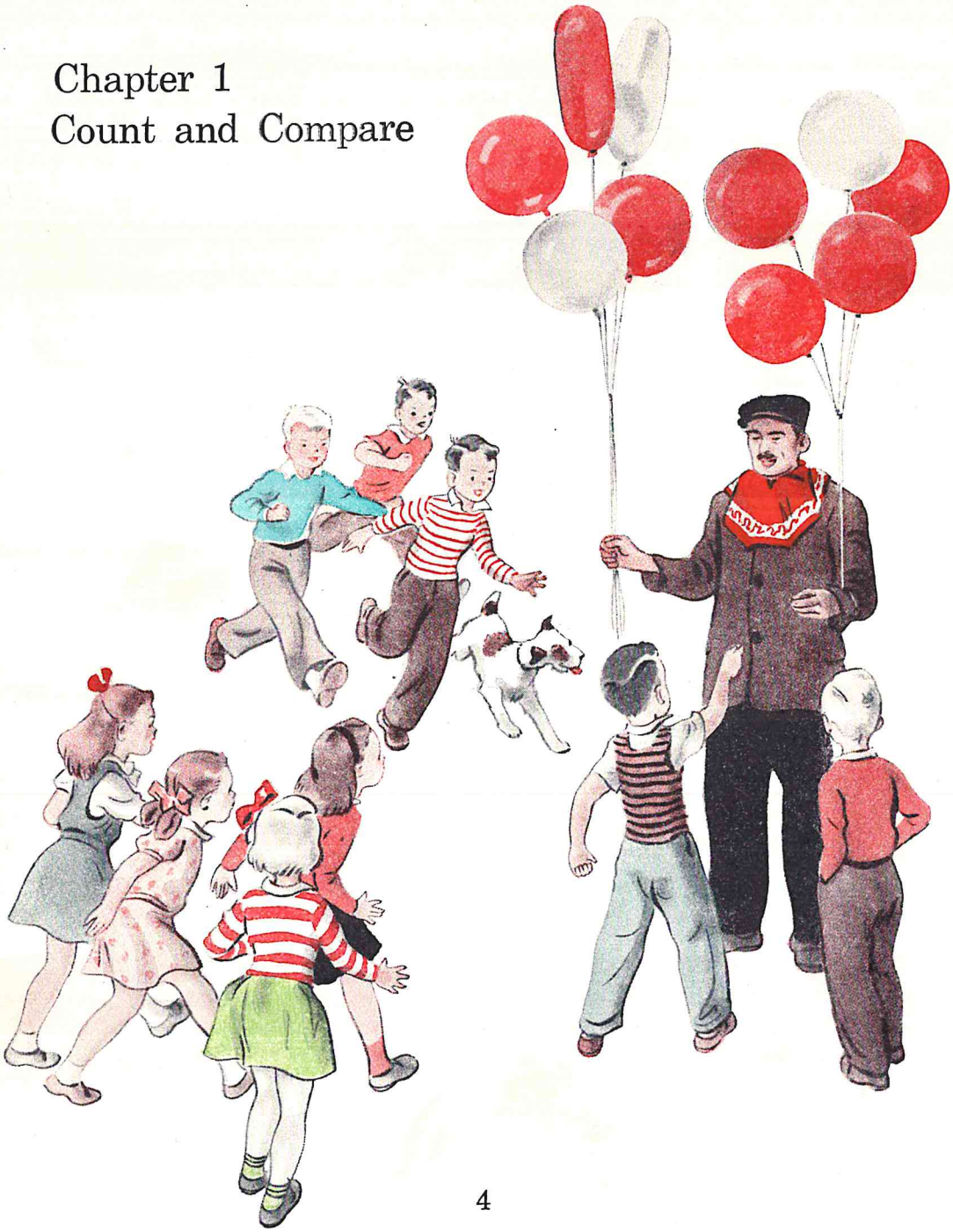


13. Counting and Writing Hundreds 152
14. Adding and Subtracting Tens 160
15. Column Addition 172
16. Adding and Subtracting by Endings . . . 184
17. Carrying in Addition 198
18. Using a Ten in Subtraction 212
19. Easy Multiplications 222
20. Easy Divisions 236
21. Equal Parts 248
22. More Multiplications and Divisions . . . 260
23. Multiplying Tens 284
24. Dividing Tens 296
Index 310

Chapter 1
Count and Compare



The Balloon Man

BALLOONS! BALLOONS! BALLOONS!
Now is the time to get a balloon for a dime.

"Let's hurry! Come on! I want to buy a balloon before they are all gone. There are one, two, three, four, five, six, seven, eight, nine, ten balloons," said Jack.

Does the man have ten balloons?
How many balloons are in his right hand?
How many big round balloons does he have?
How many red balloons does he have?
How many big long balloons has he?

one

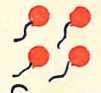
"Save a white balloon for me," called Jane.
The other girls want to buy balloons, too.
How many girls want to buy balloons?

See the boys running toward the balloon man.
How many boys are in that group?
How many boys are there in all?
How many children are there altogether?

two

We count to find how many there are.

three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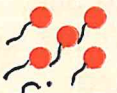
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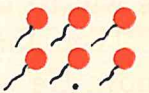
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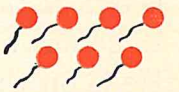
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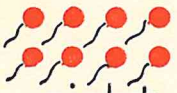
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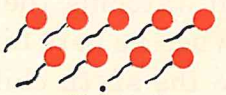
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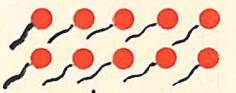
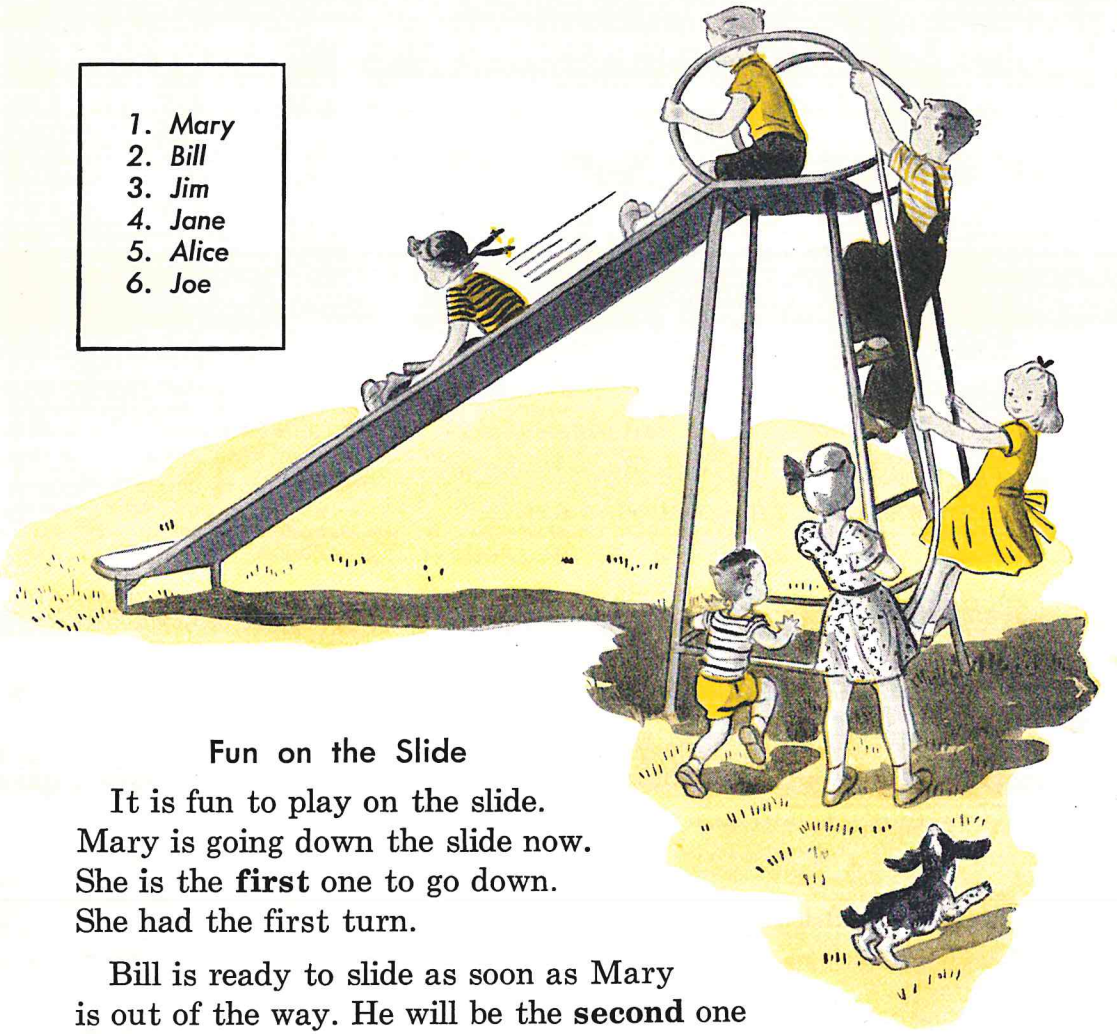

ten

1. *Mary*
2. *Bill*
3. *Jim*
4. *Jane*
5. *Alice*
6. *Joe*

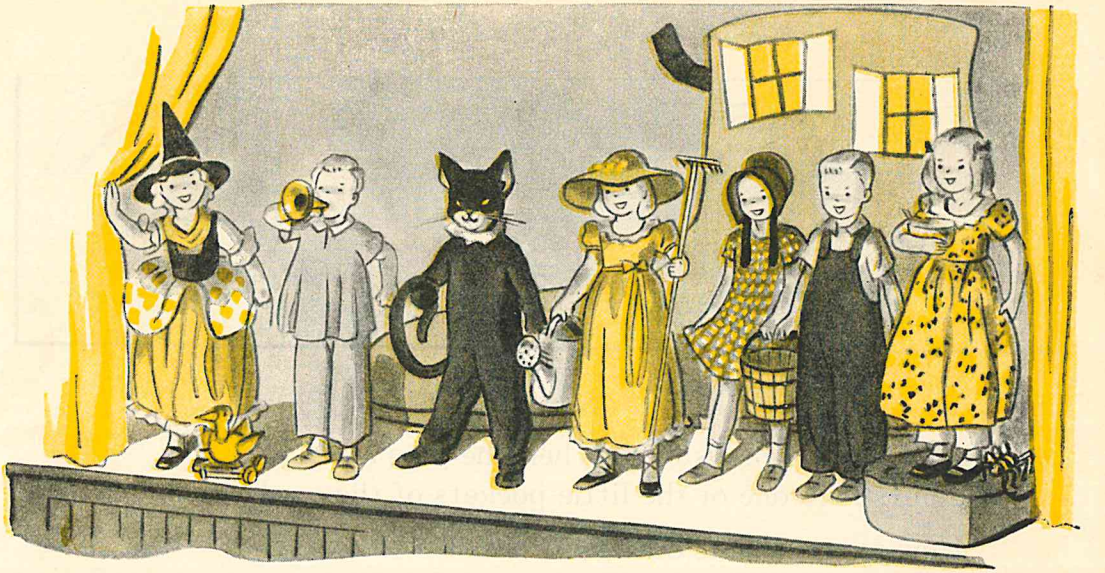


Fun on the Slide

It is fun to play on the slide.
Mary is going down the slide now.
She is the **first** one to go down.
She had the first turn.

Bill is ready to slide as soon as Mary is out of the way. He will be the **second** one to go down the slide. Then Jim will have his turn. He is on the ladder now. He will be **third**. Jane will be **fourth**, and Alice will be **fifth**.

Little Joe is having fun watching the others. He wants to slide, too. When he gets his turn, he will be last. He will be the **sixth** child to go down the slide.



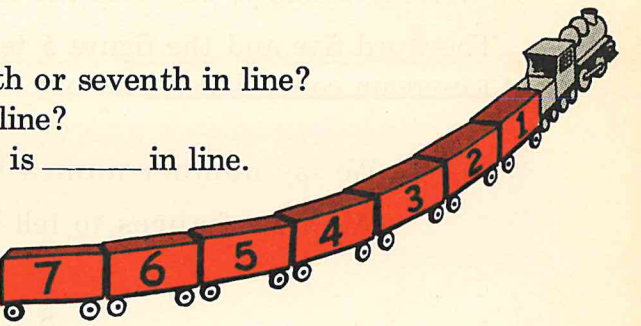
The Mother Goose Show

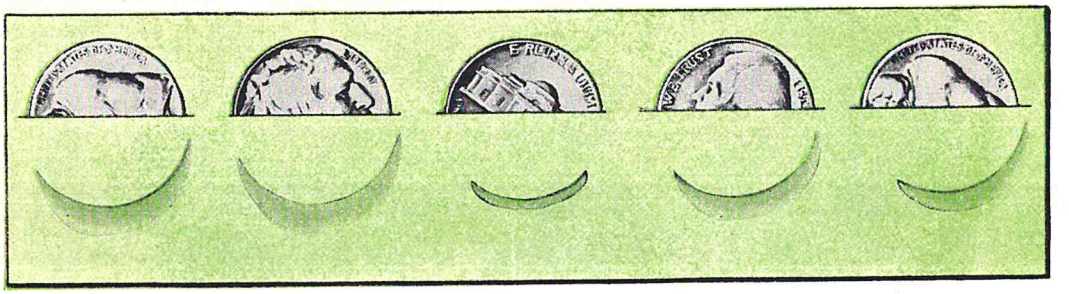
The children are having a Mother Goose show.

Who are the people standing there in a row?

Of course, Mother Goose is the first in line. Jack is there, and so is Jill. Little Miss Muffet may be scared away by the spider. Mistress Mary, how does your garden grow? Pussy Cat, Pussy Cat, did you see the Queen? Little Boy Blue is awake. Hear him blow his horn!

1. Who is second in line?
2. Is Jack fifth or sixth?
3. Who is last? Is she sixth or seventh in line?
4. Where is Pussy Cat in line?
5. Jill is next to Jack. She is _____ in line.
6. Who is first in line?
7. Who is fourth in line?





A Nickel Saver

Jane has a nickel saver. When she gets a nickel, she puts it in one of the little pockets of the card.

How many nickels does Jane have?

With her nickels she could buy:

How many ice-cream cones could she buy?

How many candy bars could she buy?

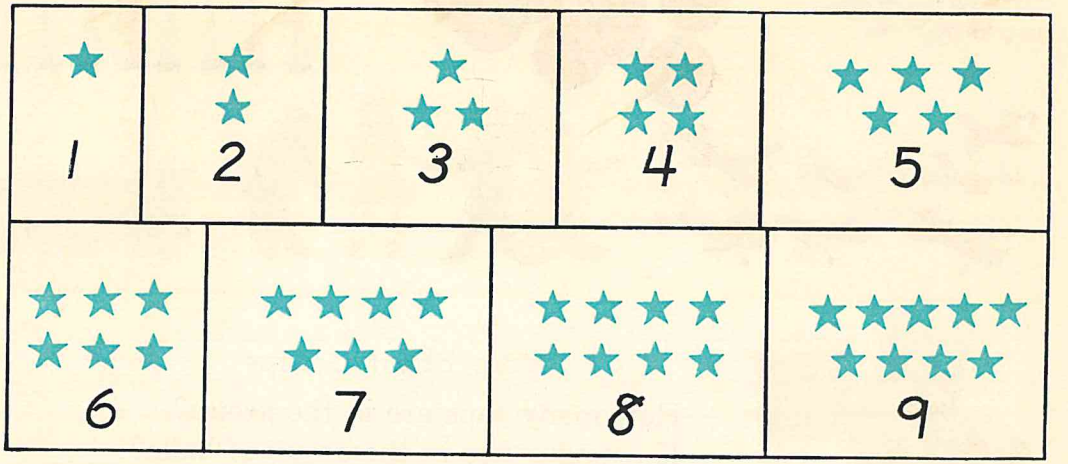
To answer each question, we say, "Five."

Five is the **name of a number.**
To tell how many, we say the **word** five.
To write how many, we write the **figure** 5.

FIVE
5

The word five and the figure 5 tell the number of ice-cream cones Jane could buy.

We say **number names** to tell how many.
We write **figures** to tell how many.



Writing Numbers

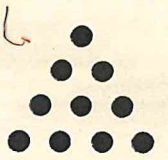
We use figures to write numbers.

The figures are 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0.

The **figure** in each box at the top of the page tells the **number** of stars in that box.

We think of two, three, four, five, six, seven, eight, or nine things as one group.
We use one figure to tell how many are in the group.

We also think of ten as one group.
But there is no figure for ten.
We use two figures to write 10.
The 0 is called **zero**.

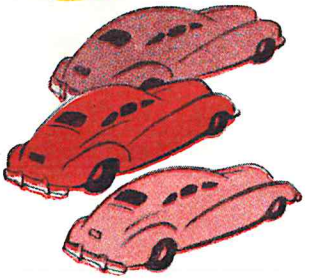


ten
10

See how each figure is made.
The dots show you where to begin the figure.
The → shows you the way to move your pencil.

More about Groups

How many tops are in the group?
How many are in the group of balls?
How many horns are in that group?
How many drums are in the group?

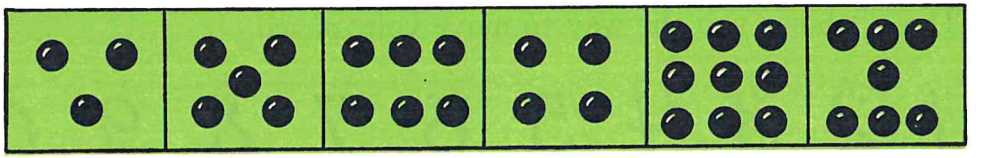


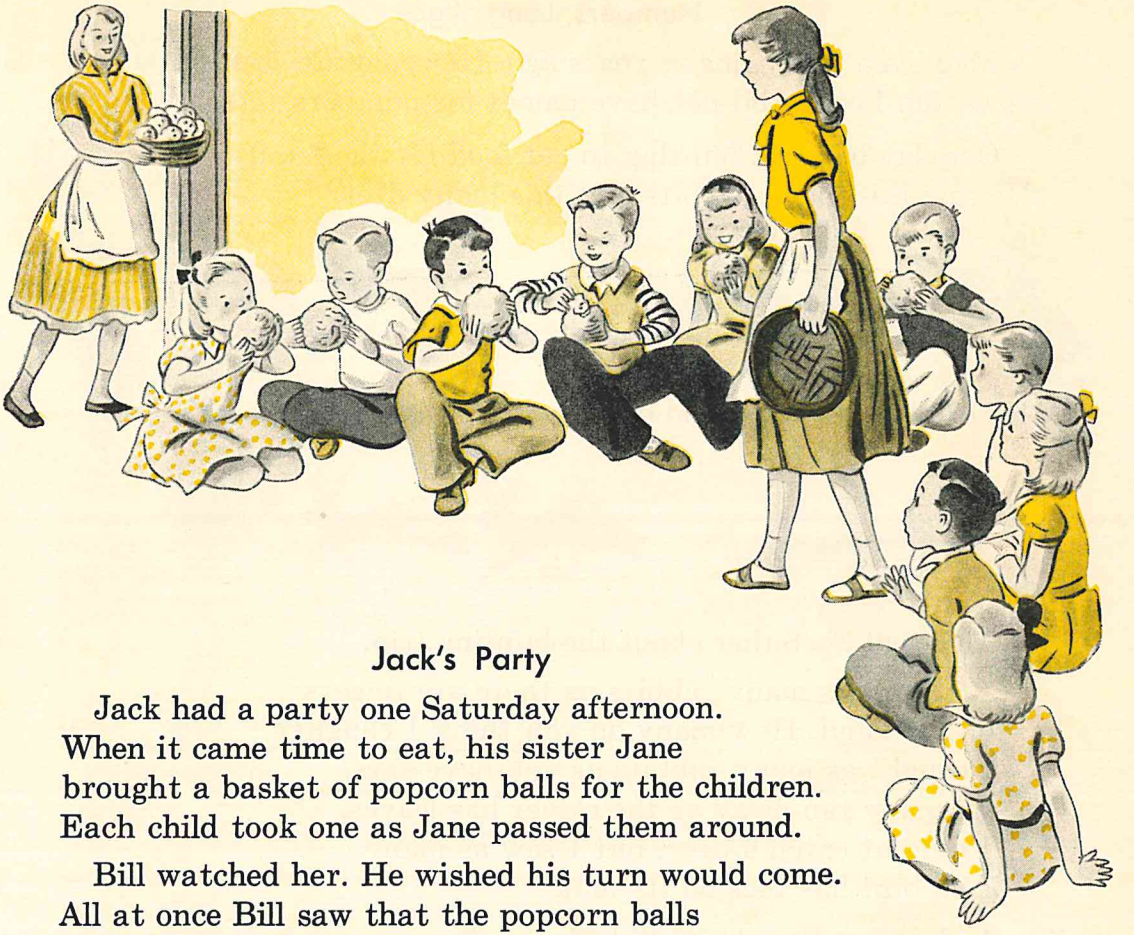
There are two or more things in a group. When two or more things of the same kind are together, they make a **group**.

Write the figure that tells:

a. How many balls there are.
b. How many tops there are.
c. How many horns there are.

How many dots are in each group below? Write the figure that tells how many dots there are in each group.





Jack's Party

Jack had a party one Saturday afternoon.
When it came time to eat, his sister Jane
brought a basket of popcorn balls for the children.
Each child took one as Jane passed them around.

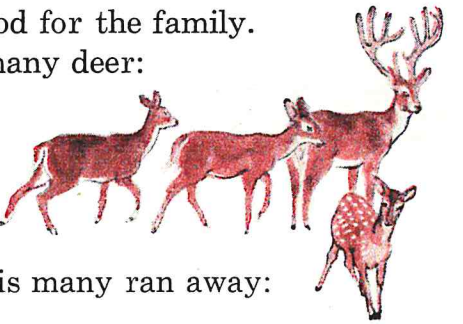
Bill watched her. He wished his turn would come.
All at once Bill saw that the popcorn balls
were all gone. He would not get one.
There were **more** children than popcorn balls.

Bill had not seen Ann come in with another basket
of popcorn balls. There was a popcorn ball for him
after all, and one for each of the other children.
There were even some popcorn balls left in the basket.
Now there were more popcorn balls than children,
and there were **fewer** children than popcorn balls.

Numbers Long Ago

Meg lived many, many years ago. He could not count as we do. People did not have names for numbers then.

One day he went hunting to get food for the family. He saw this many rabbits and this many deer:

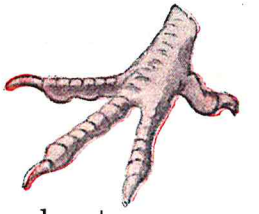


He caught this many rabbits, and this many ran away:

Meg told his father about the hunting trip:

"I saw as many rabbits as there are fingers on my hand. How many do you think I caught? I caught as many rabbits as you have ears. As many ran away as the clover has leaves. I did not catch a deer, but I saw as many as a bird has toes on its foot."

1. How many rabbits did Meg see?
2. How many rabbits did he catch?
3. How many rabbits got away?
4. How many deer did he see?



Meg could not count.
But he could tell how many animals he saw.
He **compared** them with groups that he knew about.

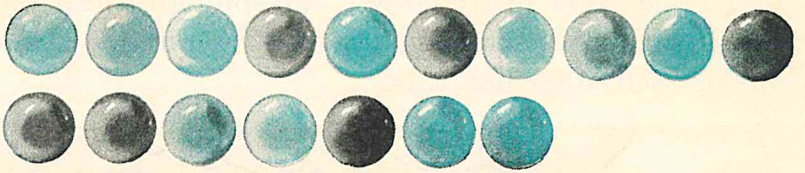
How Many More?

1. Jack has 7 marbles, and Bill has 10 marbles. How many more marbles does Bill have than Jack?

To find "how many more?" we **compare** the groups of marbles. First, we put all of Bill's marbles in a row. Then we put Jack's marbles under them like this:

Bill's

Jack's

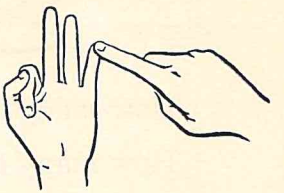


How many marbles does Bill have?

How many marbles does Jack have?

Bill has how many more marbles than Jack?

Ten is how many more than seven?



2. Joe has 3 pennies, and Jim has 8 pennies. How many more pennies has Jim than Joe?

Jim's

Joe's

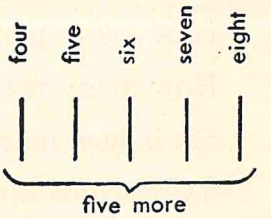
Compare the two groups of pennies.

How many pennies does Jim have?

How many pennies does Joe have?

Jim has how many more pennies than Joe?

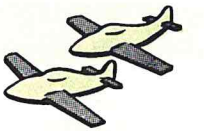
Eight is how many more than three?



How Many Fewer? How Many Less?

1. Bill has 5 toy airplanes,
and Jim has only 2 toy airplanes.
So Bill has more airplanes than Jim,
and Jim has **fewer** airplanes than Bill.

How many fewer airplanes has Jim than Bill?



To find "how many fewer?" we compare the groups of airplanes. We can compare them by putting them under each other like this:

Bill's

Jim's

How many airplanes does Bill have?

How many airplanes does Jim have?

How many fewer airplanes does Jim have than Bill?

Five is how many **more** than two?

Two is how many **less** than five?

2. Ann has 6 pencils. Jane has 2 pencils.

How many fewer pencils has Jane than Ann?

How many pencils has Ann?

How many pencils has Jane?

How many fewer pencils has Jane than Ann?

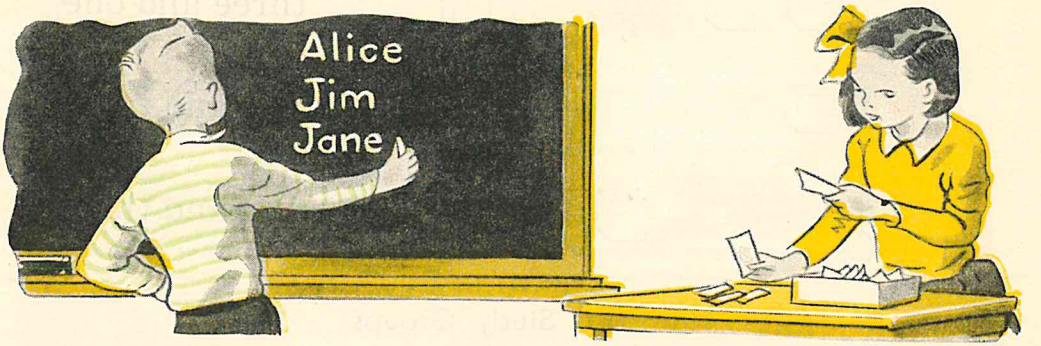
Six is how many **more** than two?

Two is how many **less** than six?

The Fun-After-School Club

Some of the children in the Fun-After-School Club wanted Alice for president, some of them wanted Jim, and some of the others wanted Jane.

Each boy and girl wrote on a piece of paper the name of the person he wanted for president.



Jim took up the votes.
Each child put his vote in the box as Jim went by.
Susan helped him count the votes.
As she took each piece of paper from the box,
she read the name on it.
Then Jim made a mark on the board after that name.

How many votes did Alice get?

How many votes did Jim get?

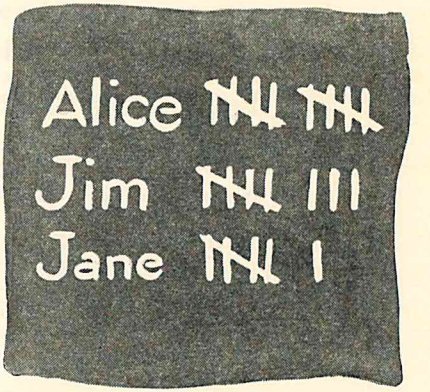
How many votes did Jane get?

Who got the most votes?

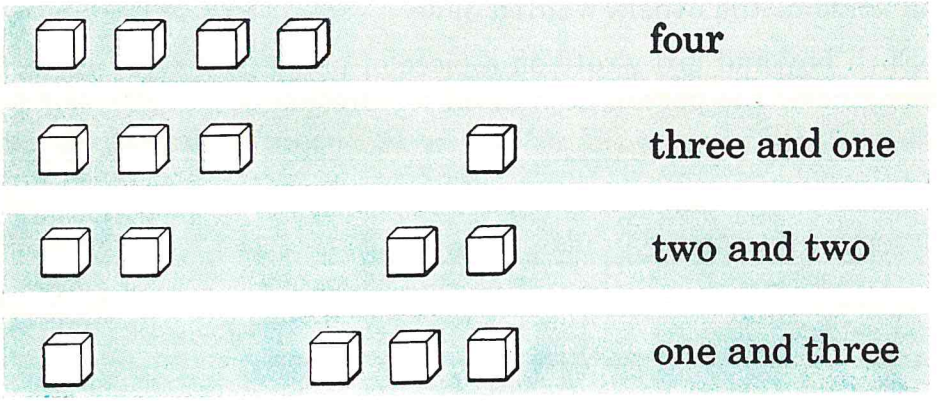
Ten is how many more than eight?

Ten is how many more than six?

"Alice is our president," said Susan.



Chapter 2
The Study of Groups



We Study Groups

Get four blocks. Put them in a straight line,
but keep them close together.

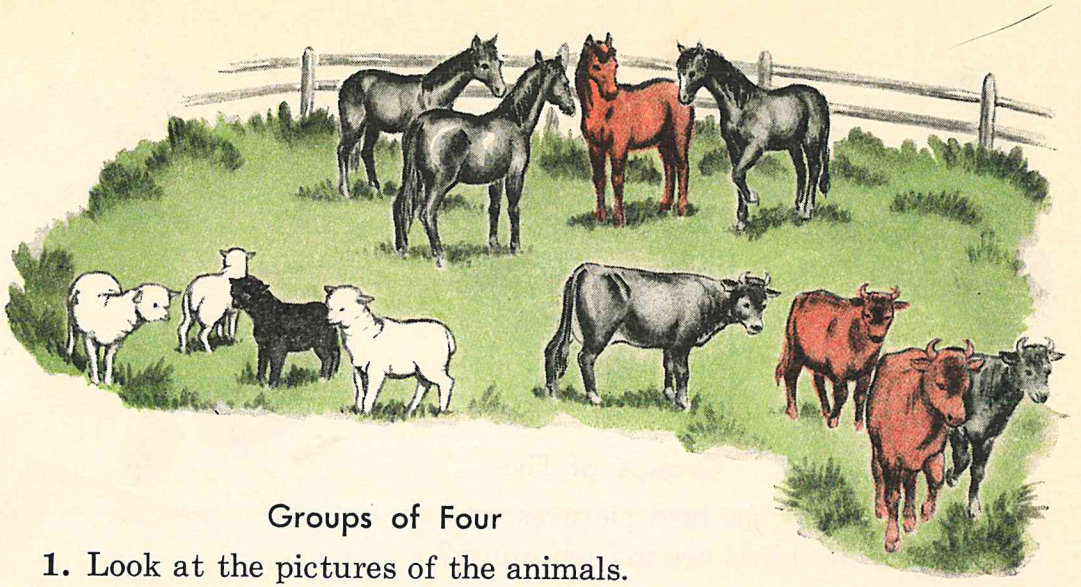
We can **arrange** the four blocks in another way.
We can move one of the blocks to the right
and make them show four as three and one.

Arrange the blocks to show four in as many ways
as you can. Tell how you arranged them each time.
Make pictures to show the ways you arranged them.

Look at the blocks at the top of this page.
Did you arrange your blocks in the same ways?

Now use five blocks.
Arrange them in as many ways as you can.
Make pictures to show how you arranged the blocks.

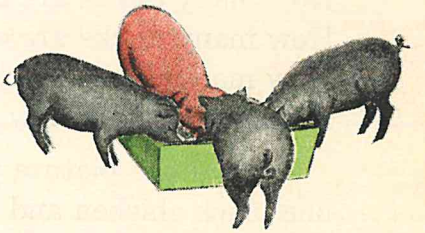
Do this with two, three, and then six.



Groups of Four

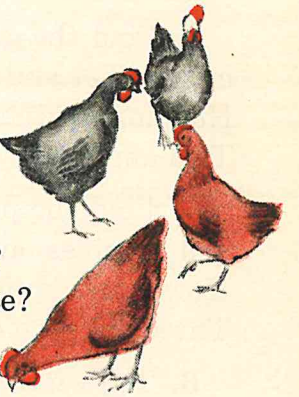
1. Look at the pictures of the animals.
How many animals are there in each group?

2. Find the group of horses.
How many horses are black?
How many horses are red?
How many horses are in the group?
Three and one are how many?

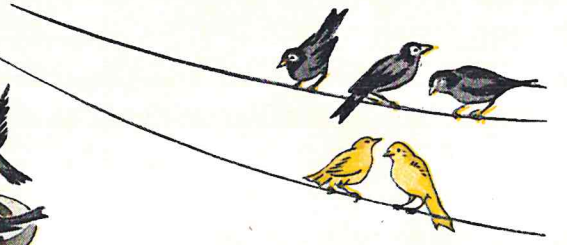


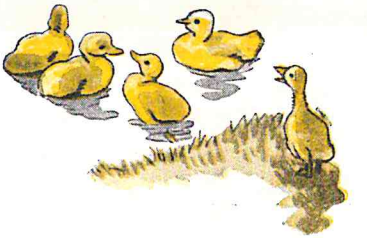
3. Find the group that has 2 red cows and 2 black cows in it.
How many cows are in this group?
Two and two are how many?

4. Find the group with 1 red pig and 3 black pigs in it.
How many pigs are in this group?
One and three are how many?



5. How many sheep do you see in the picture?
How many sheep are black? How many are white?
Three and one are how many?
One and three are how many?

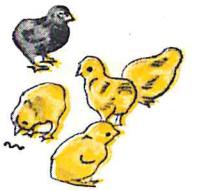




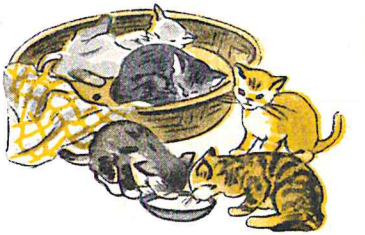
Groups of Five

1. Look at the bird pictures above.
How many birds are in each group?

2. Find the picture of the ducks.
How many ducks are in the water?
How many ducks are out of the water?
How many ducks are there in all?
Four and one are how many?

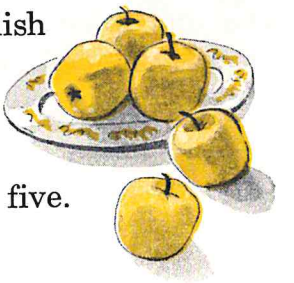


3. Find the picture that shows
one black chicken and four yellow chickens.
How many chickens are there?
One and four are how many?



4. Find the group that shows 2 kittens
in a basket and 3 kittens on the ground.
How many kittens are there altogether?
Two and three are how many?

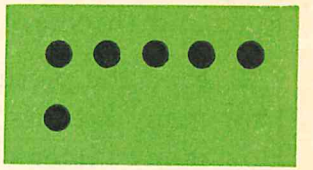
5. Find the picture that has 3 apples in a dish
and 2 apples on the table beside the dish.
How many apples are there in the picture?
Three and two are how many?



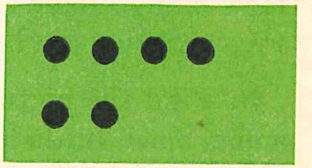
6. Tell what each bird picture shows about five.

Dot Pictures of Six

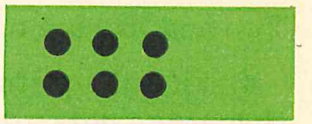
1. Jane made a dot picture of six.
She put all of the dots in a row.



2. Then she made another picture of six.
This time she put 5 dots in the top row
and 1 dot in the bottom row.
She learned that 6 is 5 and 1.

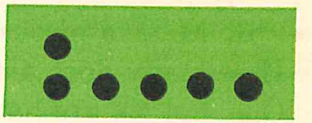


3. Jack made a dot picture of six.
How many dots are in the top row?
How many dots are in the bottom row?
Four and two are how many?



4. June made a picture of six.
She put 3 dots in the top row
and 3 dots in the bottom row.
She said, "My picture shows that six is three and three."
Is she right? Do three and three make six?

5. Make a picture with 2 dots above and 4 dots below.
What do the dots show us about six?
Two and four are how many? What is six?

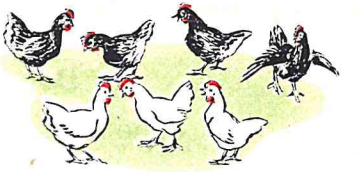


6. Make another picture of six.
This time put 1 dot above and 5 below.
How many are one and five?

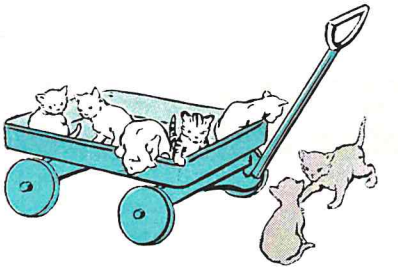
What Is Six?

Six is five and one.
Six is three and three.
Six is four and two.
Six is two and four.
Six is one and five.

Groups of Seven



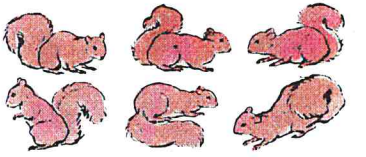
1. "I see 4 black hens and 3 white hens," said Alice. "I see 7 hens in all.
Four and three are seven."



2. Find the picture of the kittens.
How many kittens are in the wagon?
How many kittens are on the ground?
How many kittens are there in all?
Five and two are how many?

3. Find the picture with 2 red birds and 5 black birds in it.
How many birds are in the picture?
Two and five are how many?

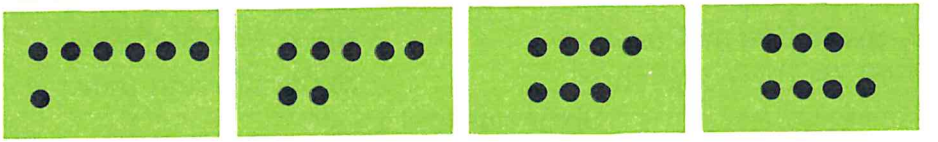
4. Find the picture that shows 7 dots.
How many dots are above?
How many dots are below?
Three and four are how many?



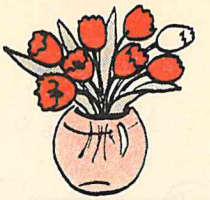
5. Find the picture with 6 squirrels above and 1 squirrel below.
How many squirrels are in the picture?
Six and one are how many?

6. Make a picture with 1 dot above and 6 below.
How many dots did you make in all?
One and six are how many?

7. Tell what each dot picture shows about seven:



Groups of Eight



1. How many flowers are in each glass?

2. Find the glass that has 7 red flowers and 1 white flower in it.

How many flowers are in the glass?
Seven and one are how many?

3. Find the glass that has 6 red flowers and 2 white flowers in it.

Are there 8 flowers in the glass?
Six and two are how many?

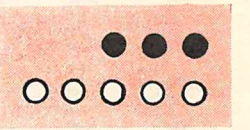
4. Alice said, "I see eight flowers in a glass. Five of them are red, and three of them are white."

Do five and three make eight?

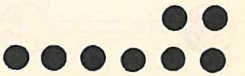
5. Find the glass that has 4 red flowers and 4 white flowers in it.

How many flowers are in the glass?
Four and four are how many?

6. Find the picture that shows 8 dots.
How many dots are black?
How many dots are white?
How many are three and five?



7. Make a picture with 2 dots above and 6 below.
How many dots are in the picture?
Two and six are how many?

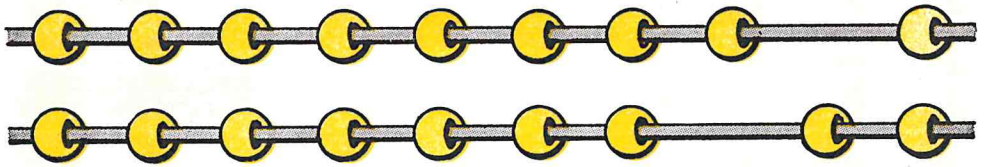


8. Make a picture with 1 dot above and 7 below.
What does the picture show about eight?

Groups of Nine

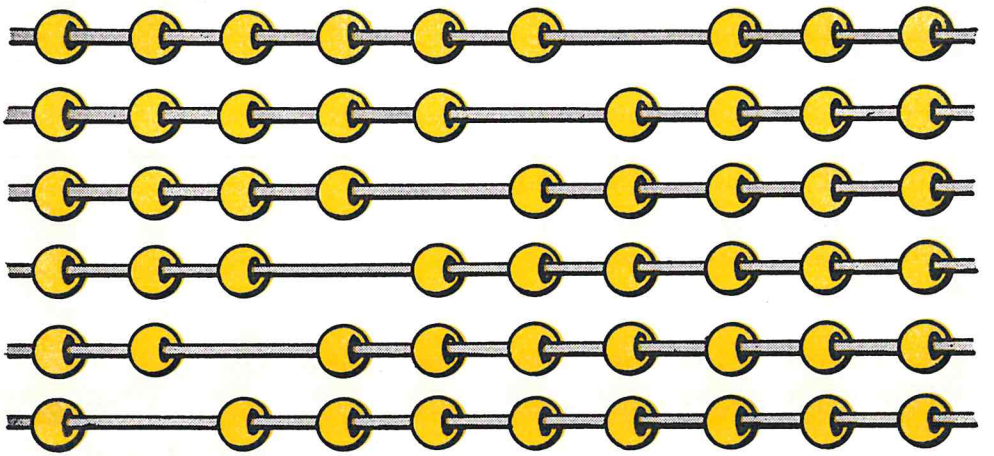
Jack has 9 beads on a wire.

He used the beads to learn about nine.
First, he moved one bead to the right.
He said, "Now the beads show that nine is eight and one."



Do seven and two make nine?

Tell the rest of the story that the beads show about nine.



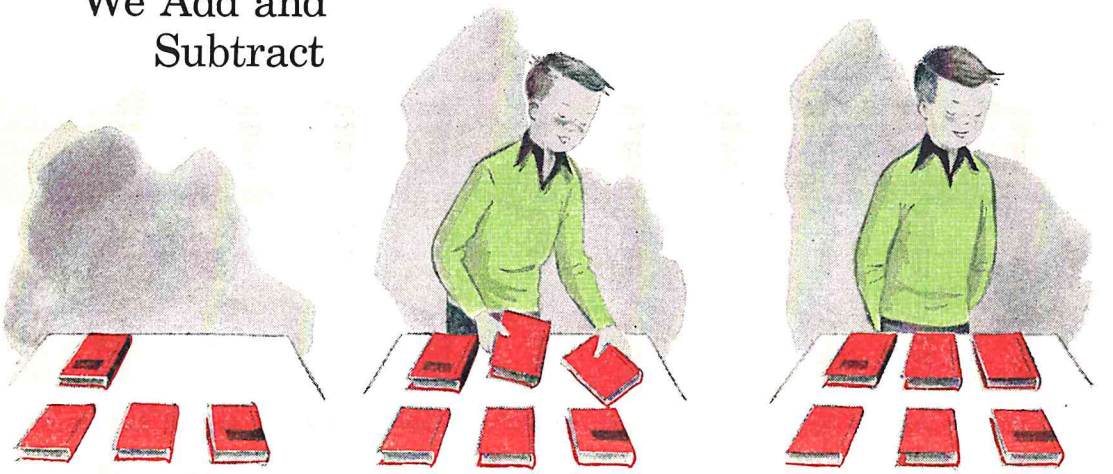
What is nine? Make pictures to show that you know what nine is.

Ten Little Indians

How many Indians are in each row?
What do the Indians show about ten?

Put 10 blocks on your desk.
Arrange them in as many ways as you can.
Make pictures to show how you arranged them.

Chapter 3
We Add and Subtract



Putting Groups Together

Jim put 4 books on the table.
Then he put 2 more books on the table with them.
How many books in all did he put on the table?

We write 4 to tell how many books
he put on the table at first.
We write 2 to tell how many books
he put on the table the next time.

$$\begin{array}{r} 4 \\ +2 \\ \hline \end{array}$$

The sign (+) in front of 2 tells us
to put the numbers together, or to **add**.
The sign (+) means "and."

$$\begin{array}{r} 4 \\ +2 \\ \hline 6 \end{array}$$

The figures ask: **Four and two are how many?**
We write 6 to tell how many books in all
Jim put on the table.
This answers the question.
We say: **Four and two are six.**

What Addition Means

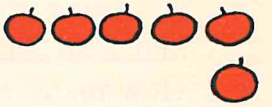
1. How many hats are in this group?
How many hats are there here?
How many hats are there in all
when we put the groups together?
Three and three are how many?

3
3
6

2. How many roses are in this group?
How many roses are there here?
How many roses are there in all
when we put the groups together?
Two and four are how many?

2
4
6

3. How many apples are above?
How many apples are below?
How many apples are there altogether
when we put 1 apple with 5 apples?
Five and one are how many?

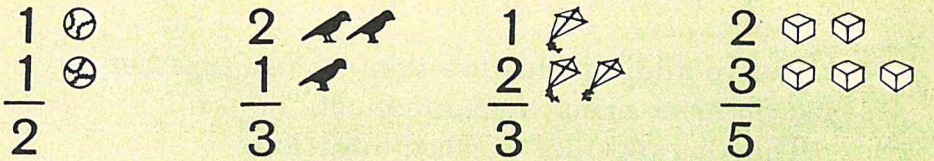


5
1
6

4. How many dolls are there here?
How many dolls are in this group?
How many dolls are there altogether
when we put 5 dolls with 1 doll?
One and five are how many?

1
5
6

When we put one with one, or one with a group,
or a group with one, or a group with a group,
and find how many there are, we are **adding**.

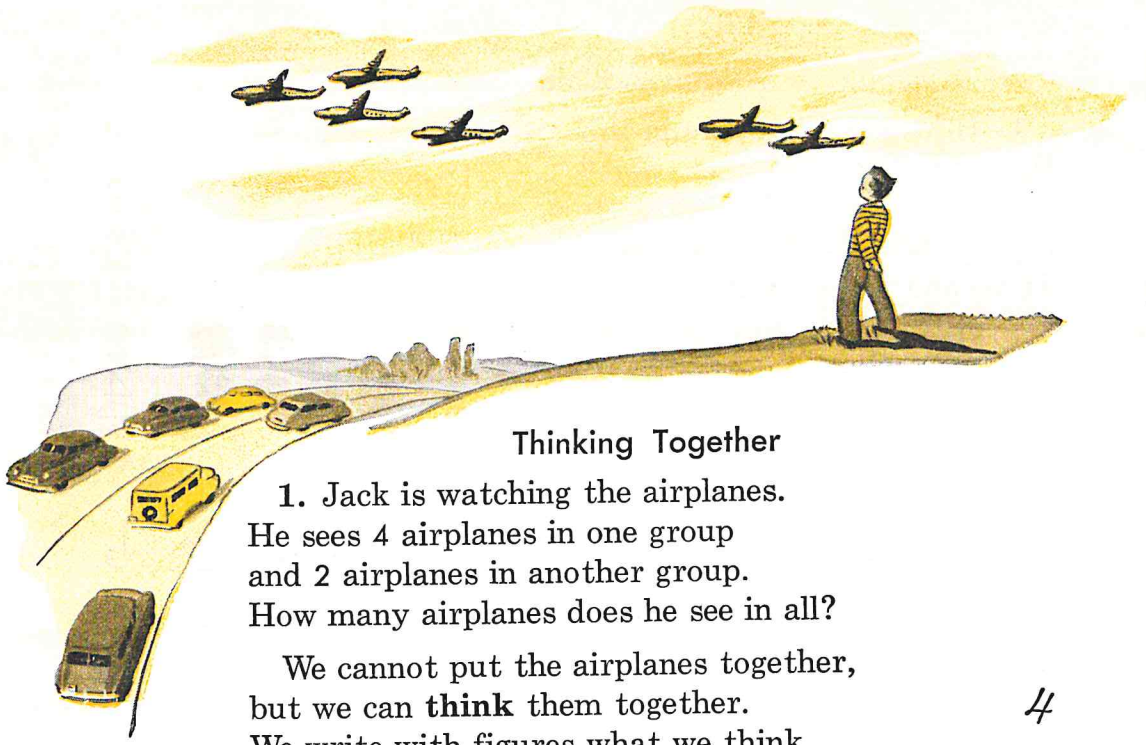


1 + 1 = 2

2 + 1 = 3

1 + 2 = 3

2 + 3 = 5



Thinking Together

1. Jack is watching the airplanes.
He sees 4 airplanes in one group
and 2 airplanes in another group.
How many airplanes does he see in all?

We cannot put the airplanes together,
but we can **think** them together.
We write with figures what we think.

How many airplanes are in one group?
How many airplanes are in the other group?
How many airplanes are there in all
when we think the groups together?

4
2
6

2. Jack saw 3 cars going down the street
and 3 cars going up the street.
How many cars did he see on the street?
Think and together.
Think: Three and three are six.

3
3
6

We are **adding** when we think things together
and find how many there are in all.
Thinking together is called **addition.**

3. Mary has 3 apples.
Joe is picking 2 more apples for her.
When he gives her the 2 apples,
how many apples will she have?
Think 🍎🍎🍎 and 🍎🍎 together.
Think: Three and two are five.
Write what you think with figures.

4. Mary took her apples home.
There was 1 apple in a dish on the table.
Mary put her 5 apples with it.
Then how many apples were in the dish?
Think: One and five are six.

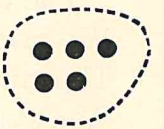
5. Jane picked 5 apples.
Then she picked 1 more apple.
How many apples did she pick?
Five and one are how many?

6. Jim picked 2 apples for Aunt Mary's pie.
That was not enough. So Jim picked 3 more apples.
How many apples did Jim pick for the pie?

Say the answer to each addition question:

2	2	1	1	4	3	3
2	3	1	5	2	1	3
2	2	1	5	1	4	1
4	1	3	1	4	1	2

Jim did not know the answer to $\begin{array}{r} 3 \\ +2 \end{array}$.
He made a picture with 3 dots above and 2 dots below.
Then he counted the dots together.



We Take Some Away

"Jane, you may put six books
on the table," said Miss Brown.
"Now you may take away two books.
How many books are left on the table?"

Jane counted the books that were left.
She said, "There are four books left."

We say, "Two from six is four."

How many books did Jane put on the table?

How many books did she take away?

How many books were left on the table?

Two from six is how many?

The sign (–) in front of 2 tells us to take two from six.
The sign (–) means "take away" or "from."

The figures ask: **Two from six is how many?**
We write 4 to tell how many books were left.
This answers the question.
We say: **Two from six is four.**

$$\begin{array}{r} 6 \\ -2 \\ \hline \end{array}$$

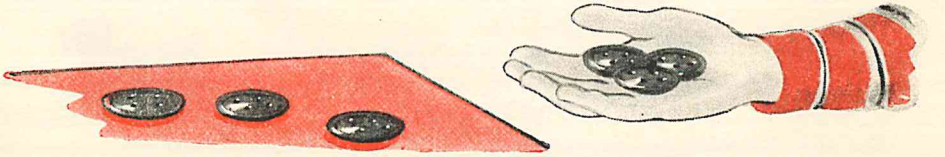
$$\begin{array}{r} 6 \\ -2 \\ \hline 4 \end{array}$$

1. Joe showed with spools how he counted away.
How many spools did Joe put on the table?
How many spools did he take away?
How many spools were left on the table?
One from six is how many?

$$\begin{array}{r} 6 \\ -1 \\ \hline \end{array}$$

2. Jack put 6 buttons in a row on his desk.
Then he took away 3 of the buttons.
How many buttons were left on his desk?
Three from six is how many?

$$\begin{array}{r} 6 \\ -3 \\ \hline \end{array}$$



3. Put 6 buttons in a group. Now take away 4.
How many buttons are left?
Four from six is how many?

$$\begin{array}{r} 6 \\ -4 \\ \hline \end{array}$$

We are **subtracting** when we take some away from a group and find how many are left.
Taking away is called **subtraction.**

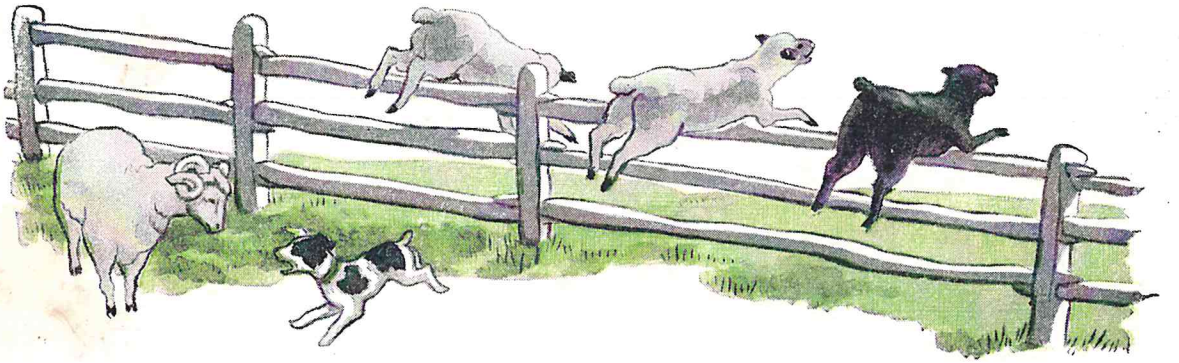
Picture Stories

1. Four boys were playing ball in Bill's yard.
Two of the boys went home, and the others stayed.
How many boys were playing ball then?
Two from four is how many?

$$\begin{array}{r} 4 \\ -2 \\ \hline 2 \end{array}$$

2. Four sheep were eating grass in a field.
Three sheep jumped the fence and ran away.
How many sheep were left in the field?
Three from four is how many?

$$\begin{array}{r} 4 \\ -3 \\ \hline \end{array}$$



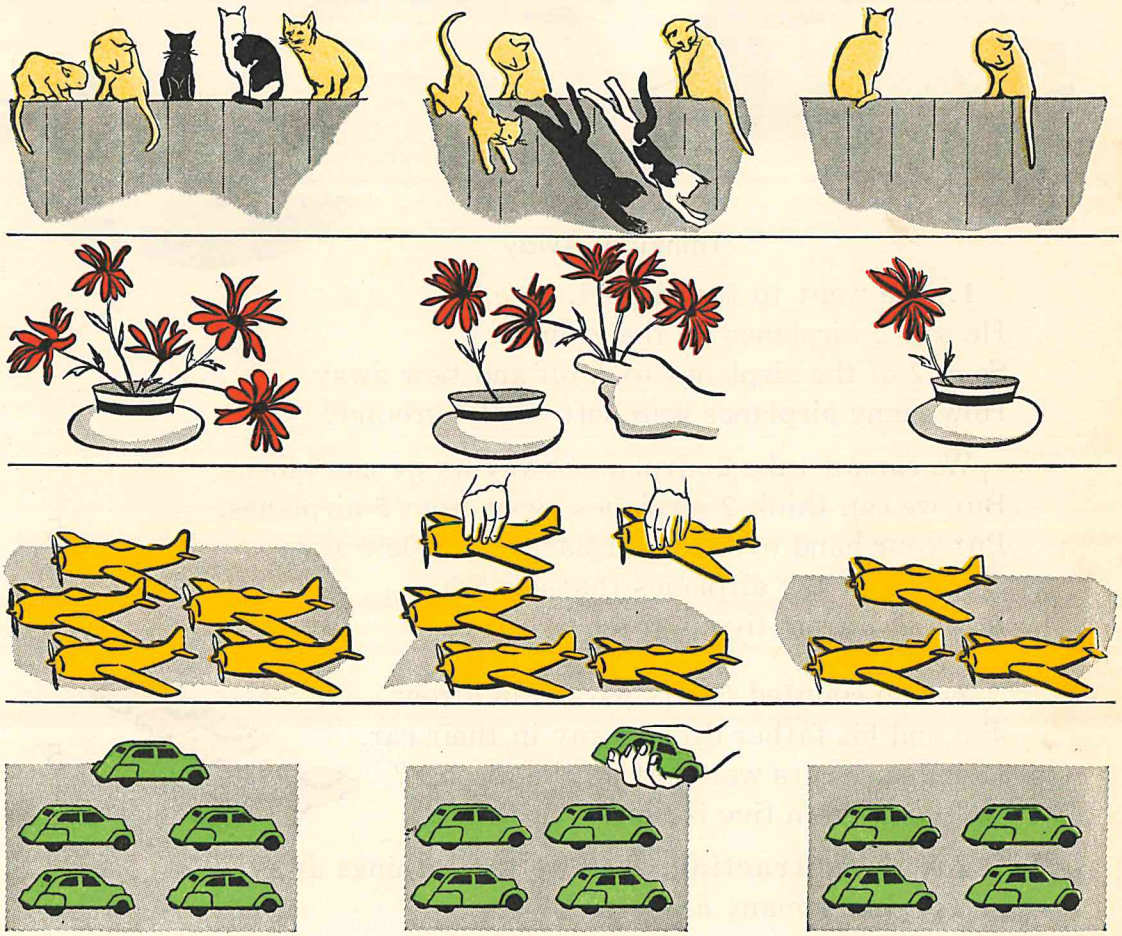
3. Jack saw 4 airplanes in the store.
He found one that he liked. He bought it.
How many airplanes were left in the store to sell?
One from four is how many?

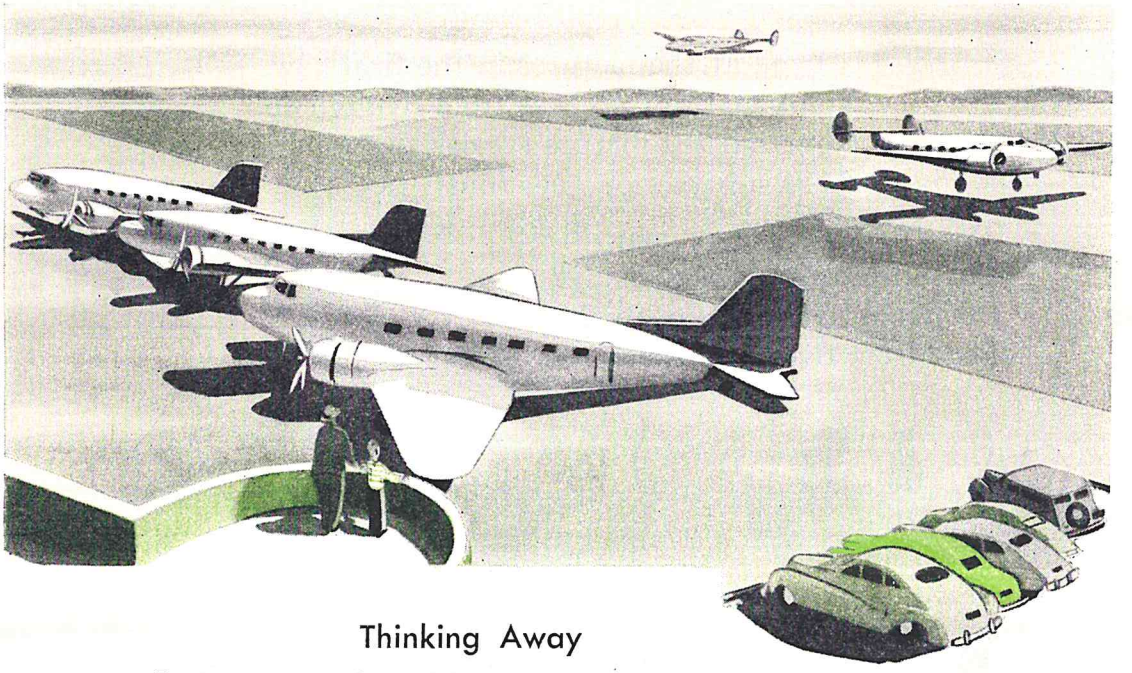
$$\begin{array}{r} 4 \\ -1 \\ \hline \end{array}$$

Look at the pictures in the first row.
Think and say, "Three from five is two."
Now find the picture stories that answer
these subtraction questions:

Two from five is how many?
Three from five is how many?
One from five is how many?
Four from five is how many?

$$\begin{array}{rrrr} 5 & 5 & 5 & 5 \\ -2 & -3 & -1 & -4 \\ \hline \end{array}$$





Thinking Away

1. Jim went to the airport.
He saw 5 airplanes on the ground.
Soon 2 of the airplanes took off and flew away.
How many airplanes were left on the ground?

We cannot take 2 airplanes away as we can blocks.
But we can think 2 airplanes away from 5 airplanes.
Put your hand over the airplanes that flew away.
Then count the airplanes that are left.
Think: Two from five is three.

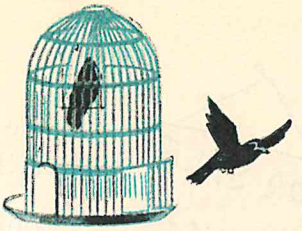
$$\begin{array}{r} 5 \\ -2 \\ \hline \end{array}$$

2. Jim counted 5 cars parked in a row.
Jim and his father drove away in their car.
How many cars were left at the airport?
Think: One from five is four.

$$\begin{array}{r} 5 \\ -1 \\ \hline \end{array}$$

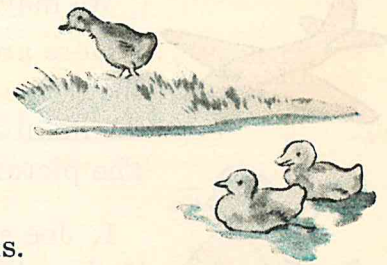
We are **subtracting** when we think things away and find how many are left.

Away They Go



1. Jane had 2 birds in a cage.
The door came open, and 1 bird got out.
How many birds were left in the cage?
One from two is how many?

2. We can use stars to stand for the birds.
The two stars stand for the birds in the cage.
Cover one star to show the bird that got out.
How many are left?



3. Three ducks were in the water.
One duck got out of the water
and went to look for bugs in the grass.
How many ducks stayed in the water?
One from three is how many?

4. We can use dots to stand for the ducks.
Cover 1 dot to show the duck that went away.
How many are left?
One from three is how many?

5. Three little pigs were in a pen.
Two of them found a hole and got out.
How many pigs were left in the pen?
Two from three is how many?

6. Draw 3 dots to stand for the little pigs.
Cover 2 dots. How many dots are left?
Two from three is how many?

The Children Buy Toys

The pictures on the next page show the things that the children bought at the toy sale.

Look at the first picture in the top row.
What does it tell you?
Now look at the second picture in that row.
What does it tell you?
What question can you ask about the two pictures?

We may ask, "Two from five is how many?"

Here are some stories that the children told about the pictures. Read each story and say the number word that goes in each blank. The pictures will give you the missing numbers.

1. Joe saw *five* airplanes on the table.
He bought _____ of the airplanes.
Then there were _____ airplanes left.

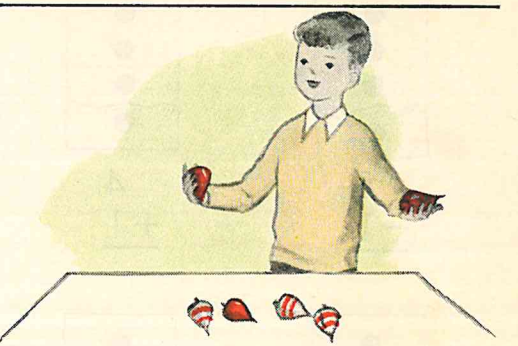
2. Alice saw _____ dolls. She bought _____ dolls.
There were _____ dolls left.

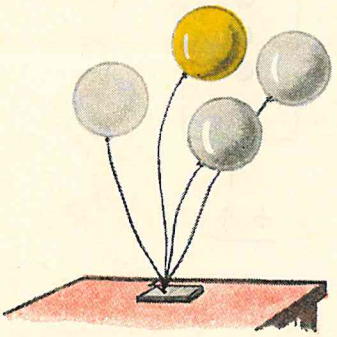
3. Jim wanted to buy a top. He saw _____ tops for sale. He bought _____ tops.
Then there were _____ tops left for sale.

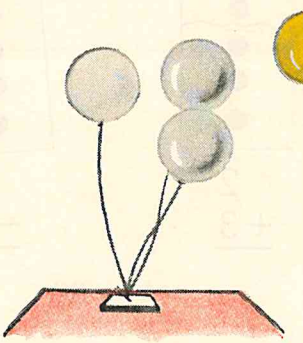
4. Jerry wanted a balloon. He saw _____ balloons.
He bought the yellow balloon.
Then there were _____ balloons left.

5. Say the answer to each subtraction question:

6	5	6	5	5	6	6	6	5	6
−2	−3	−4	−2	−1	−4	−5	−3	−4	−1

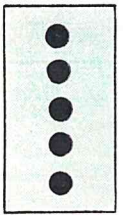






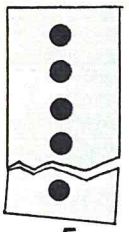
Chapter 4
Easy Additions and Subtractions

The Whole Story about Five

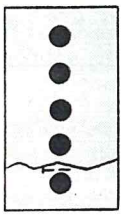


Jim made 5 dots on a piece of paper.
He tore off 1 of the dots.
He said, "One from five is four."
Then he put the 1 dot back with the 4 dots.
He said, "Four and one are five."

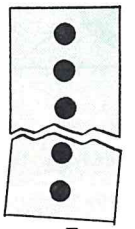
Look at each piece of paper.
Then say the addition or subtraction that it shows.



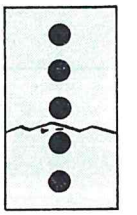
$$\begin{array}{r} 5 \\ -1 \\ \hline \end{array}$$



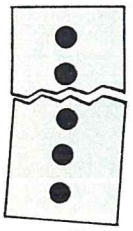
$$\begin{array}{r} 4 \\ +1 \\ \hline \end{array}$$



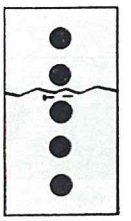
$$\begin{array}{r} 5 \\ -2 \\ \hline \end{array}$$



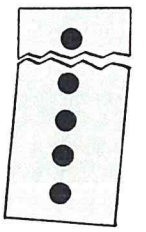
$$\begin{array}{r} 3 \\ +2 \\ \hline \end{array}$$



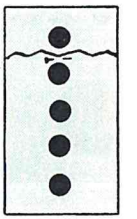
$$\begin{array}{r} 5 \\ -3 \\ \hline \end{array}$$



$$\begin{array}{r} 2 \\ +3 \\ \hline \end{array}$$



$$\begin{array}{r} 5 \\ -4 \\ \hline \end{array}$$



$$\begin{array}{r} 1 \\ +4 \\ \hline \end{array}$$

The Whole Story about Four

1. Jack has 3 red balloons and 1 white balloon.
How many balloons has he in all?
Three and one are how many?

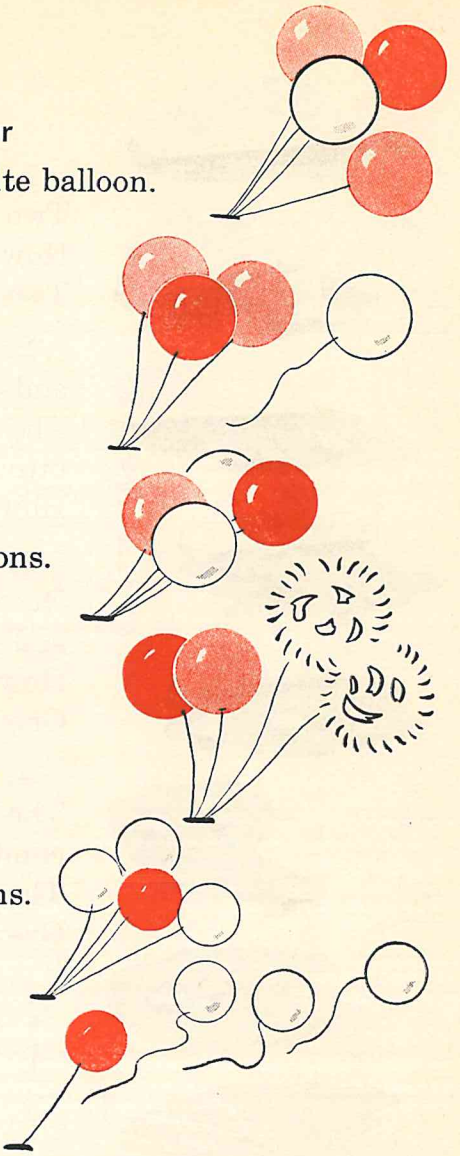
2. Jack had 4 balloons.
The string on the white balloon broke,
and away it went with the wind.
How many balloons did he have left?
One from four is how many?

3. Mary has 2 red and 2 white balloons.
How many balloons does she have?
Two and two are how many?

4. Mary was holding her 4 balloons.
Pop! Pop! went the 2 white balloons.
How many balloons did she have then?
Two from four is how many?

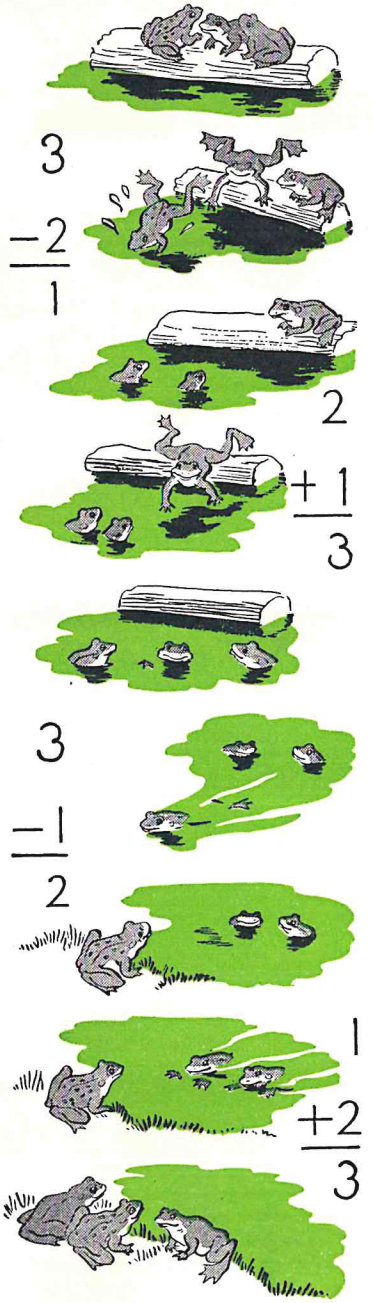
5. Jane has 1 red and 3 white balloons.
How many balloons has she?
One and three are how many?

6. Jane had 4 balloons altogether.
There go the 3 white balloons!
How many balloons did she have left?
Three from four is how many?



Study:

$$\begin{array}{r} 4 \\ -1 \\ \hline 3 \end{array} \qquad \begin{array}{r} 3 \\ +1 \\ \hline 4 \end{array} \qquad \begin{array}{r} 4 \\ -2 \\ \hline 2 \end{array} \qquad \begin{array}{r} 2 \\ +2 \\ \hline 4 \end{array} \qquad \begin{array}{r} 4 \\ -3 \\ \hline 1 \end{array} \qquad \begin{array}{r} 1 \\ +3 \\ \hline 4 \end{array}$$



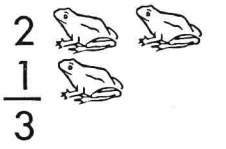
The Whole Story about Three

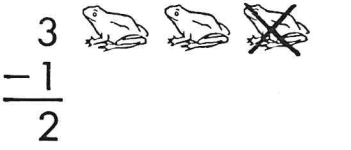
1. Three frogs were on a log.
Two frogs jumped into the water.
How many frogs were left on the log?
Two from three is how many?

2. Two frogs were in the water,
and one frog was on the log.
The frog on the log jumped
into the water with the two frogs.
How many frogs were in the water then?

3. Three frogs were in the water.
One frog swam away
and climbed on the bank.
How many frogs were still in the water?
One from three is how many?

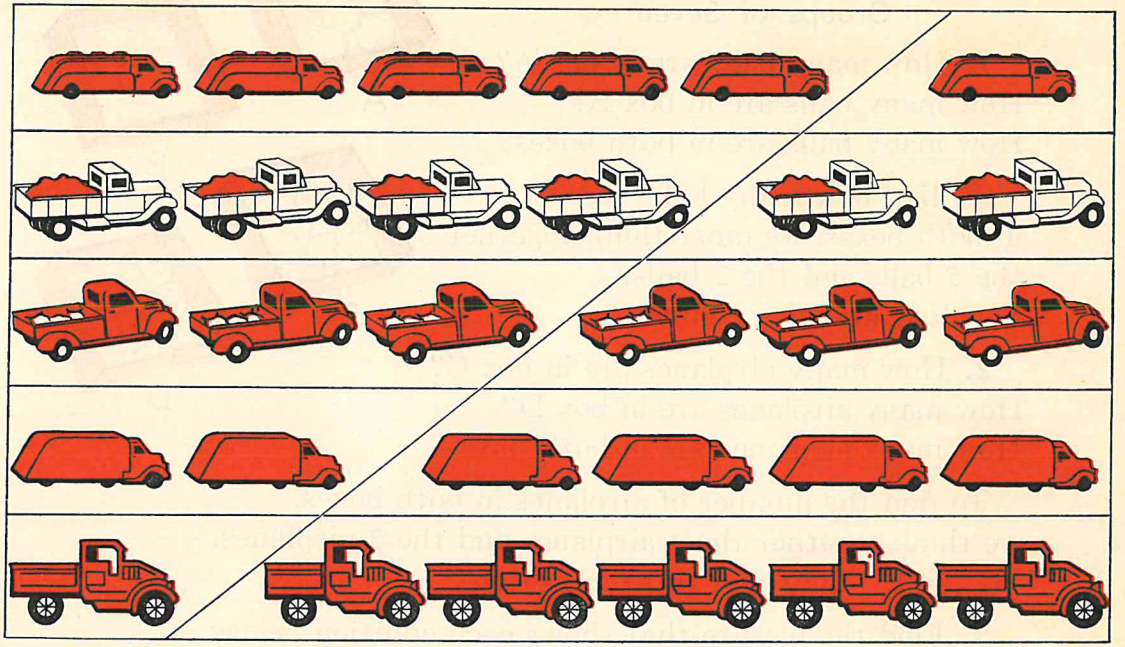
4. One frog was on the bank.
The two frogs in the water
climbed on the bank with the one frog.
Then how many frogs were together again?
One and two are how many?





Study:

3	2	3	1	1	2
−2	+1	−1	+2	+1	−1
1	3	2	3	2	1



The Whole Story about Six

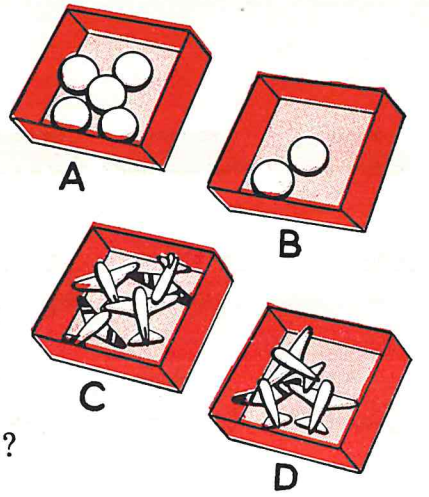
How many trucks are there in each row?
Make believe that 1 truck went away.
How many trucks are left?
Think and say, "One from six is five."

Now make believe that the truck came back.
Think and say, "Five and one are six."

Use the rows of trucks in the picture to tell the whole story about five.

6	5	6	4	6	3	6	2	6	1
−1	+1	−2	+2	−3	+3	−4	+4	−5	+5
5	6	4	6	3	6	2	6	1	6

Groups of Seven



1. How many balls are in box A?
How many balls are in box B?
How many balls are in both boxes?

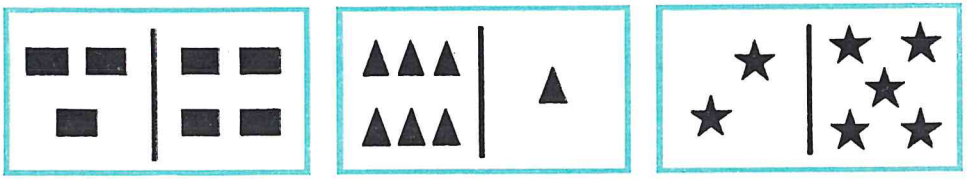
To find how many balls there are in both boxes, we must think together the 5 balls and the 2 balls.
We must **add** five and two.

2. How many airplanes are in box C?
How many airplanes are in box D?
How many airplanes are in both boxes?

To find the number of airplanes in both boxes, we think together the 4 airplanes and the 3 airplanes.
We think, "Four and three are seven."

3. Find the picture that shows each addition below:

$$\begin{array}{r} 5 \\ +2 \\ \hline 7 \end{array} \qquad \begin{array}{r} 4 \\ +3 \\ \hline 7 \end{array} \qquad \begin{array}{r} 2 \\ +5 \\ \hline 7 \end{array} \qquad \begin{array}{r} 3 \\ +4 \\ \hline 7 \end{array} \qquad \begin{array}{r} 6 \\ +1 \\ \hline 7 \end{array} \qquad \begin{array}{r} 1 \\ +6 \\ \hline 7 \end{array}$$



4. Write the addition that each picture shows.

5. Make a dot picture for each addition question.
Then write the addition that each picture shows.

$$\begin{array}{r} 4 \\ +3 \\ \hline \end{array} \qquad \begin{array}{r} 5 \\ +2 \\ \hline \end{array} \qquad \begin{array}{r} 6 \\ +1 \\ \hline \end{array} \qquad \begin{array}{r} 2 \\ +5 \\ \hline \end{array} \qquad \begin{array}{r} 3 \\ +4 \\ \hline \end{array} \qquad \begin{array}{r} 1 \\ +6 \\ \hline \end{array}$$

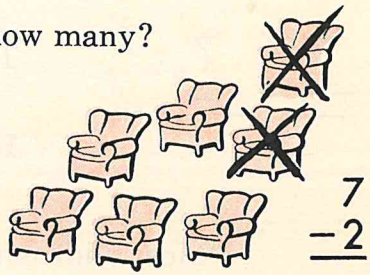
More about Seven

1. Alice brought 7 dolls to school.
Mary wanted 1 of them, and Alice gave it to her.
How many dolls did Alice have left?

$$\begin{array}{r} 7 \\ -1 \\ \hline \end{array}$$

Cover 1 of the dolls with your finger.
How many are left? One from seven is how many?

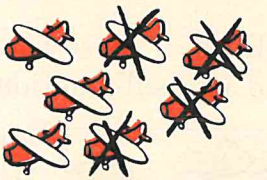
2. Mary brought 7 doll chairs.
She gave Alice 2 chairs for the doll.
How many chairs did Mary have then?



$$\begin{array}{r} 7 \\ -2 \\ \hline \end{array}$$

Cover 2 chairs. How many are left?
Two from seven is how many?

3. Joe had 7 airplanes.
He traded 4 of them to Jim for 3 cars.
How many airplanes did Joe have then?
Four from seven is how many?



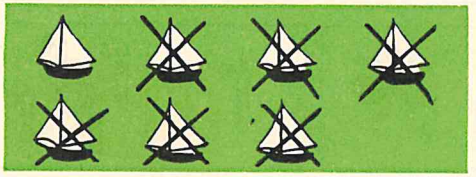
$$\begin{array}{r} 7 \\ -4 \\ \hline \end{array}$$

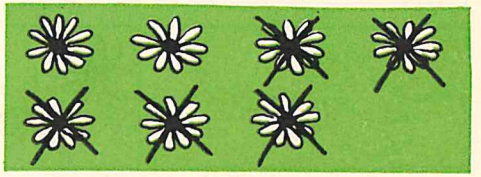
4. Jim had 7 cars.
He traded 3 of the cars to Joe for the airplanes.
Then how many cars did Jim have?

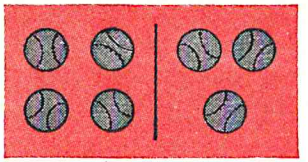
$$\begin{array}{r} 7 \\ -3 \\ \hline \end{array}$$

5. Look at the pictures below.
Five from seven is how many?
Six from seven is how many?

$$\begin{array}{r} 7 \\ -5 \\ \hline \end{array} \qquad \begin{array}{r} 7 \\ -6 \\ \hline \end{array}$$







$$\begin{array}{rr} 4 & 3 \\ +3 & +4 \end{array} \qquad \begin{array}{rr} 7 & 7 \\ -3 & -4 \end{array}$$

Addition and Subtraction Pairs

We can make pictures to help us study additions and subtractions about seven.

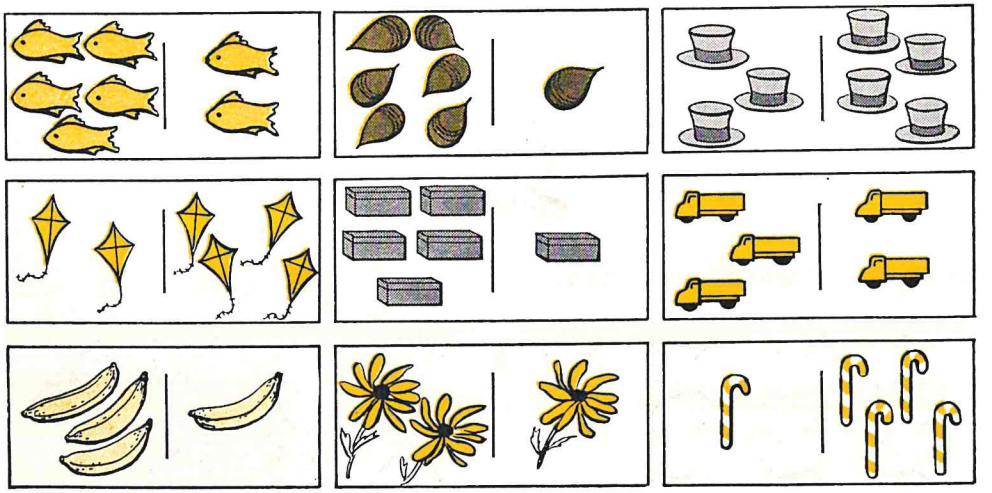
Draw four balls and three balls.
Count the balls together.
How many are there in all?
Four and three are how many?
Three and four are how many?

Cover 3 balls. How many are left?
Three from seven is how many?

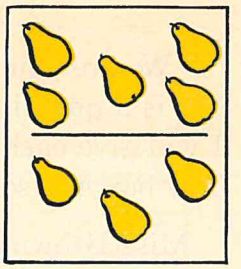
Cover 4 balls. How many are left?
Four from seven is how many?

Most additions and subtractions go in pairs.

Each of these pictures shows two additions (a pair) and two subtractions (a pair). What are they? Write them.



The Whole Story about Eight



We can use pictures to help us study the additions and subtractions about eight.
How many pears are in the picture?
How many pears are above?
How many pears are below?
Five and three are how many?
Three and five are how many?

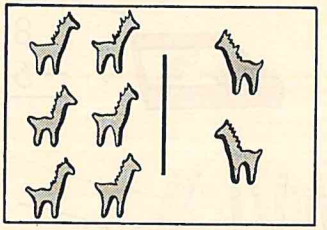
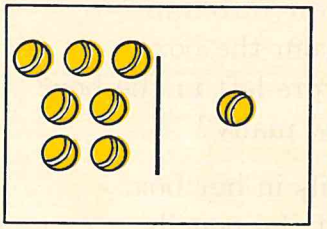
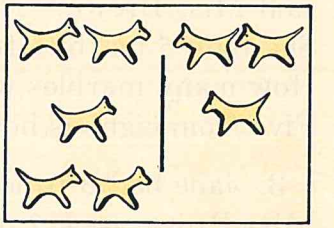
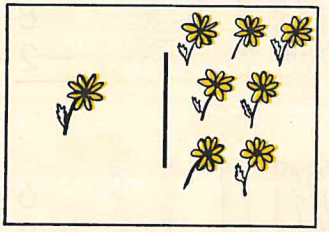
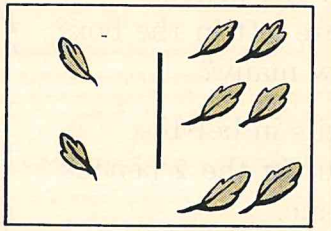
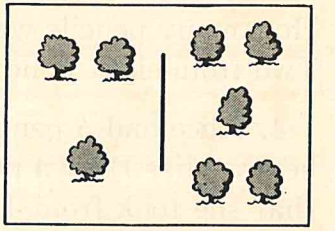
$$\begin{array}{r} 5 \\ +3 \\ \hline 8 \end{array} \qquad \begin{array}{r} 3 \\ +5 \\ \hline 8 \end{array}$$

Cover 3 pears. How many are left?
Three from eight is how many?

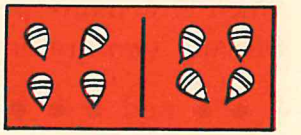
Cover 5 pears. How many are left?
Five from eight is how many?

$$\begin{array}{r} 8 \\ -3 \\ \hline 5 \end{array} \qquad \begin{array}{r} 8 \\ -5 \\ \hline 3 \end{array}$$

Each picture below shows 2 additions and 2 subtractions about eight.
What are they? Write them.

How many additions and subtractions can you make with this picture?
What are they? Write them.

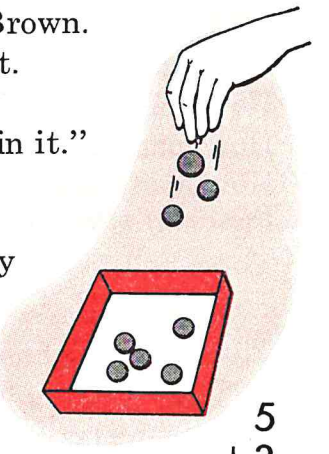


We Learn about Eight

"We are going to play a game," said Miss Brown.
"It is a question and answer game about eight.
I will give each of you a little box.
The box has some marbles, pencils, or blocks in it."

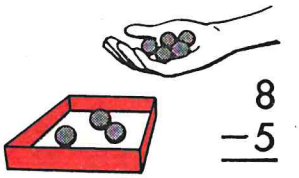
Miss Brown put 3 marbles in Jack's box.

"Now, Jack, you may tell us a number story about your marbles," said Miss Brown.



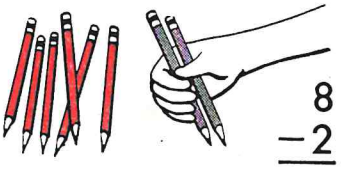
$$\begin{array}{r} 5 \\ +3 \\ \hline \end{array}$$

1. "I had five marbles in my box.
Then Miss Brown put three marbles
in the box with them," said Jack.
"How many marbles are in the box now?"
Five and three are how many?



$$\begin{array}{r} 8 \\ -5 \\ \hline \end{array}$$

2. "Jack has eight marbles in his box,"
said Miss Brown. "Now watch me!"
She took 5 marbles from the box.
How many marbles were left in the box?
Five from eight is how many?



$$\begin{array}{r} 8 \\ -2 \\ \hline \end{array}$$

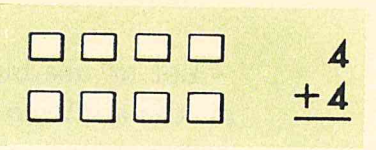
3. Jane had 8 pencils in her box.
Miss Brown took 2 of the pencils.
How many pencils were left in the box?
Two from eight is how many?

$$\begin{array}{r} 6 \\ +2 \\ \hline \end{array}$$

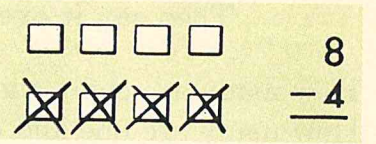
4. Alice had 6 pencils in her box
before Miss Brown put in the 2 pencils
that she took from Jane.
Then how many pencils did Alice have?
Six and two are how many?

● ● and ● ● ● ● ● ● are how many?

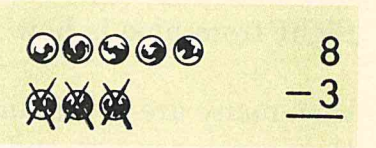
5. Tom had 4 blocks.
Miss Brown gave him 4 blocks.
How many blocks had he then?
Four and four are how many?



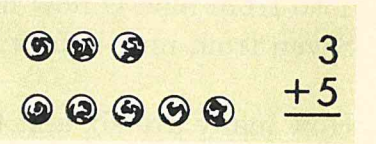
6. Tom has 8 blocks now.
If Miss Brown takes 4 of them,
how many blocks will he have left?
Four from eight is how many?



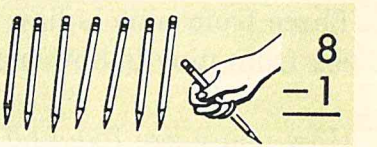
7. Joe had 8 marbles.
Miss Brown took 3 of them.
How many marbles did he have then?
Three from eight is how many?



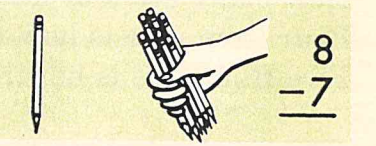
8. Miss Brown has 3 marbles,
and Joe has 5 marbles.
Together they have ____ marbles.
Three and five are how many?



9. Betty had 8 pencils.
Miss Brown took away 1 pencil.
How many pencils had Betty then?
One from eight is how many?



10. Sue had 8 pencils.
She gave 7 pencils to Miss Brown.
How many pencils did Sue have then?
Seven from eight is how many?



5	8	8	6	4	8	8	3	8	8
+3	−5	−2	+2	+4	−4	−3	+5	−1	−7
8	3	6	8	8	4	5	8	7	1

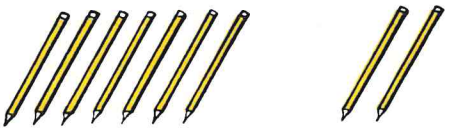
Nine

Let us use blocks, buttons, or pencils to find all the additions and subtractions about nine.

Write each one as you find it.
Then say it over and over to remember it.

How many are eight and one?
How many are one and eight?
One from nine is how many?
Eight from nine is how many?

How many are seven and two?
How many are two and seven?
Two from nine is how many?
Seven from nine is how many?

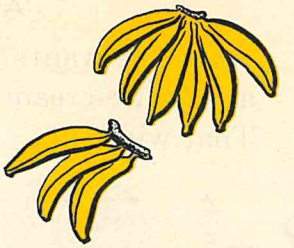


How many are six and three?
How many are three and six?
Three from nine is how many?
Six from nine is how many?

How many are five and four?
How many are four and five?
Four from nine is how many?
Five from nine is how many?

8 +1	1 +8	9 −1	9 −8	7 +2	2 +7	9 −2	9 −7
6 +3	3 +6	9 −3	9 −6	5 +4	4 +5	9 −4	9 −5

More about Nine



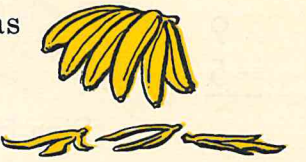
1. Jack found 6 bananas in one bunch and 3 bananas in another bunch.
He bought both bunches of bananas.
How many bananas did he buy?
Six and three are how many?

$$\begin{array}{r} 6 \\ +3 \\ \hline \end{array}$$

2. Jim bought some apples.
Three of them were red,
and 6 of them were yellow.
How many apples did he buy?

$$\begin{array}{r} 3 \\ +6 \\ \hline \end{array}$$

3. Jack's family ate 3 of his 9 bananas on their oatmeal for breakfast.
How many bananas were left then?
Three from nine is how many?



$$\begin{array}{r} 9 \\ -3 \\ \hline \end{array}$$

4. Jim had 9 apples. He left 6 of them at home and took the others to school.
How many apples did he take to school?
Six from nine is how many?

$$\begin{array}{r} 9 \\ -6 \\ \hline \end{array}$$

5. Jane bought 5 pears. Then she bought 4 more.
How many pears did she buy in all?
Five and four are how many?

$$\begin{array}{r} 5 \\ +4 \\ \hline \end{array}$$

6. Jane's family ate 4 of the 9 pears for lunch.
How many pears were left?
Four from nine is how many?

$$\begin{array}{r} 9 \\ -4 \\ \hline \end{array}$$

Study:

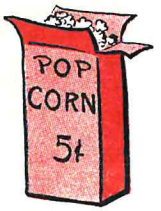
$$\begin{array}{r} 6 \\ +3 \\ \hline 9 \end{array} \qquad \begin{array}{r} 3 \\ +6 \\ \hline 9 \end{array} \qquad \begin{array}{r} 9 \\ -3 \\ \hline 6 \end{array} \qquad \begin{array}{r} 9 \\ -6 \\ \hline 3 \end{array} \qquad \begin{array}{r} 5 \\ +4 \\ \hline 9 \end{array} \qquad \begin{array}{r} 9 \\ -4 \\ \hline 5 \end{array}$$

At the Candy Store

1. Jack wants to buy some jelly beans and an ice-cream cup.
That will take _____ ¢ and _____ ¢, or _____ ¢.

$$\begin{array}{r} 4 \\ +5 \\ \hline \end{array}$$

Four and five are how many?



2. Jim had 9 cents. He bought a box of popcorn. How much money did he have left?

$$\begin{array}{r} 9 \\ -5 \\ \hline \end{array}$$

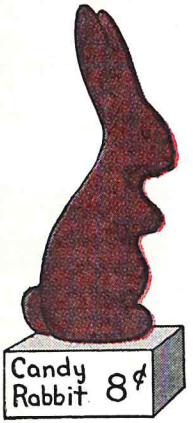
Five from nine is how many?

3. Joe said, "I can buy a candy rabbit for 8¢ and a stick of gum for 1¢. Eight and one are nine, and I have nine cents."

$$\begin{array}{r} 8 \\ +1 \\ \hline \end{array}$$

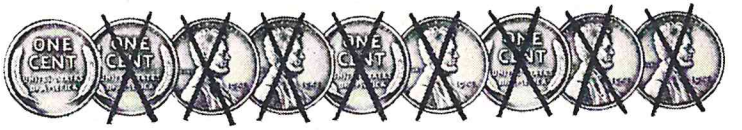
$$\begin{array}{r} 1 \\ +8 \\ \hline \end{array}$$

Eight and one are how many?
One and eight are how many?

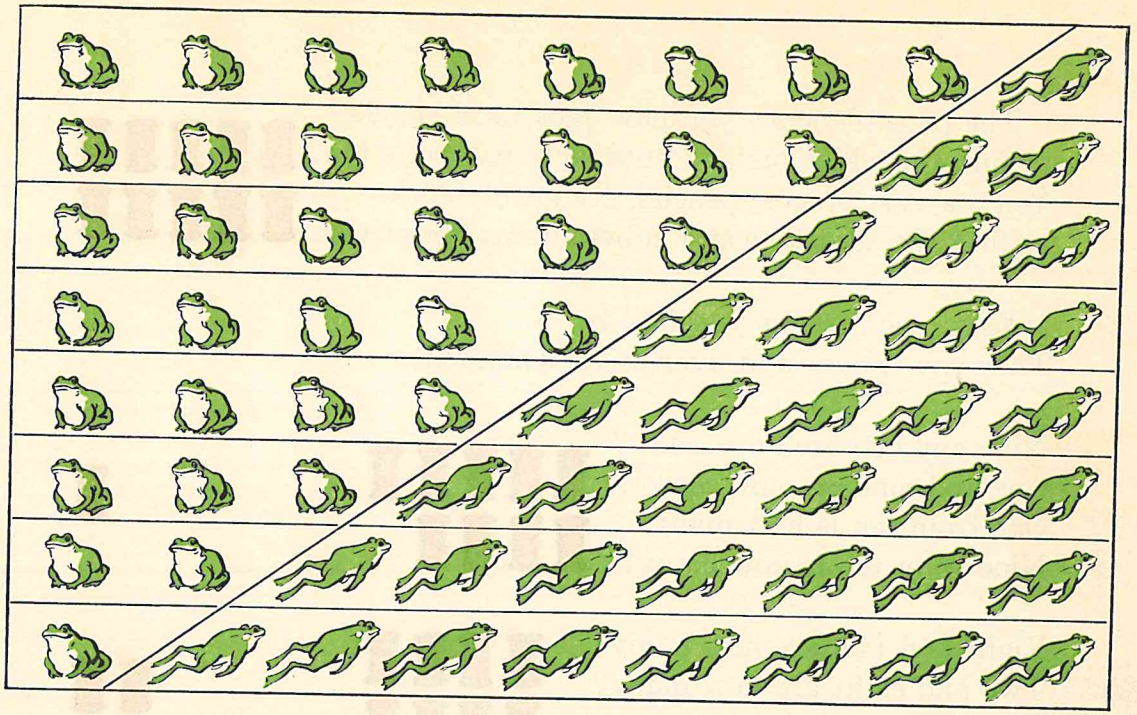


4. Jane had 9 pennies. She gave the man in the store 8 pennies for a candy rabbit.
How many pennies did she have left?

$$\begin{array}{r} 9 \\ -8 \\ \hline \end{array}$$



Eight from nine is how many?



The Whole Story about Nine

How many frogs are in each row?
Make believe that 1 frog hopped away.
Think and say, "One from nine is eight."

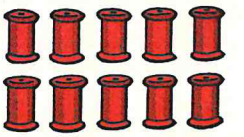
Now make believe the 1 frog came back.
Think and say, "Eight and one are nine."

Use the rows of frogs to tell the whole story about nine.

8	9	2	9	9	5	9	1
+1	−1	+7	−3	−5	+4	−4	+8
7	9	9	6	9	3	9	4
+2	−7	−2	+3	−6	+6	−8	+5

Ten

The pictures show you how Jack used spools
to find the additions and subtractions about ten.
You may use spools, pencils, sticks, or blocks
to find the additions and subtractions about ten.



Write each one as you find it.
Then say it over and over to remember it.

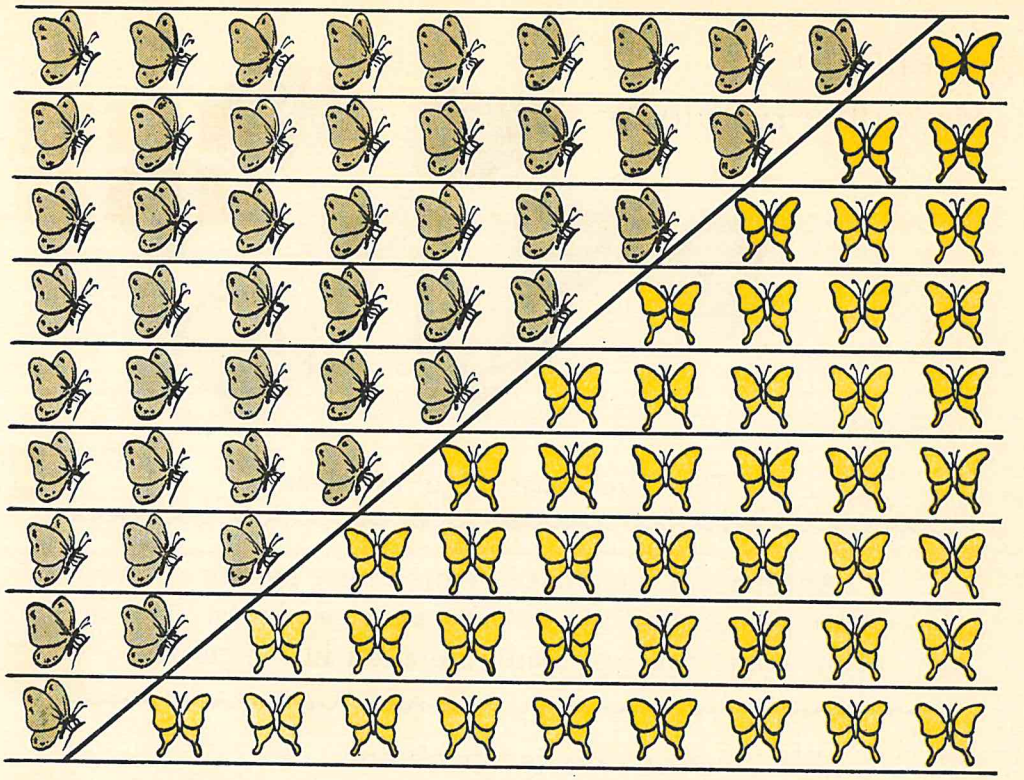
Nine and one are how many?
One and nine are how many?
One from ten is how many?
Nine from ten is how many?

Eight and two are how many?
Two and eight are how many?
Two from ten is how many?
Eight from ten is how many?

Seven and three are how many?
Three and seven are how many?
Three from ten is how many?
Seven from ten is how many?

Six and four are how many?
Four and six are how many?
Four from ten is how many?
Six from ten is how many?

Five and five are how many?
Five from ten is how many?

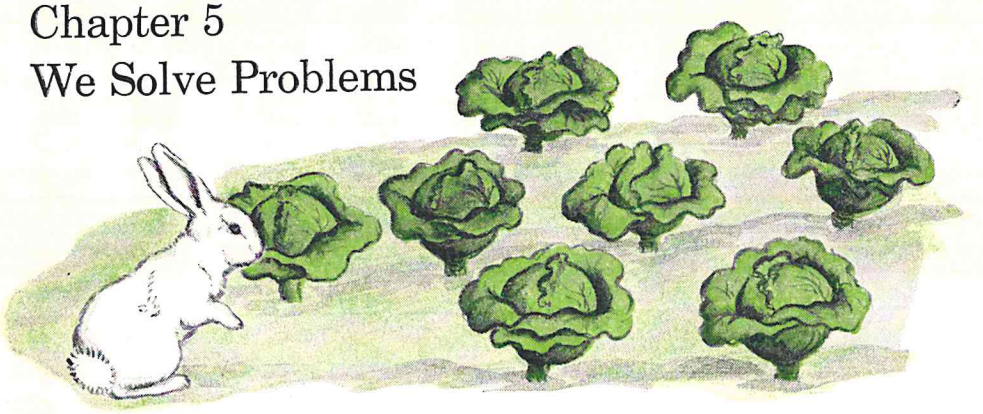


The Whole Story about Ten

How many butterflies are in each row?
Make believe 1 butterfly flew away.
Think and say, "One from ten is nine."
Now make believe the 1 butterfly came back.
Think and say, "Nine and one are ten."
Tell the rest of the story about ten.

10	9	10	8	10	7	10	6	10
−1	+1	−2	+2	−3	+3	−4	+4	−5
5	10	4	10	3	10	2	10	1
+5	−6	+6	−7	+7	−8	+8	−9	+9

Chapter 5
We Solve Problems



The Two Parts of a Problem

Ann set out 8 cabbage plants in her garden.
One day a rabbit ate 1 of the cabbage plants.
How many cabbage plants were left in the garden?

The number story is a **problem**.

It has two parts; every problem has two parts.

The first part tells us two things:

Ann set out 8 *cabbage plants.*

A rabbit ate 1 *of them.*

The second part asks us a question:

How many cabbage plants were left?

We use what the problem tells to answer the question. When we answer the question, we **solve** the problem. To solve the problem, we add or subtract. When we add, we put together. When we subtract, we take away.

Look at the picture. Does it show putting together? Or does it show taking away? Do we subtract 1 from 8 to answer the question?

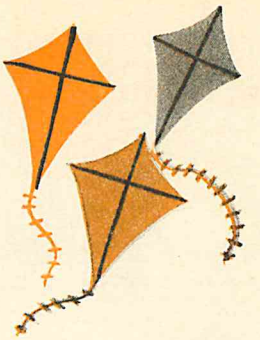
Which?

$$\begin{array}{r} 8 \\ +1 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ -1 \\ \hline \end{array}$$

Why?

How Many Are Left?



1. Joe made 3 kites.
He gave 1 of them to Tom.
How many kites did Joe have left?

This is a **subtraction** problem.

What are you asked to find?

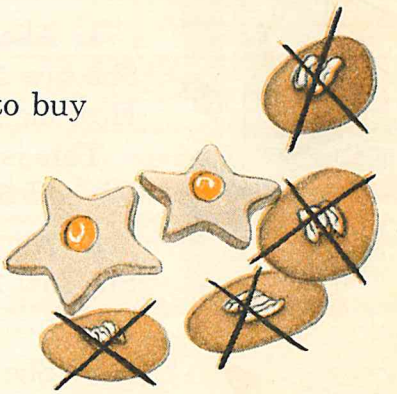
Will you think things away to find the answer?

2. Mary bought 4 new hair ribbons.
She gave 2 of them to Ann and kept the rest.
How many hair ribbons did Mary keep?

3. Tom had 7 marbles. He lost 2 of them.
How many marbles did he have then?

4. There were 6 puppies at the pet store.
Mr. Day sold 5 of them.
Then how many puppies did Mr. Day have?

5. Ann and her mother made 7 little cherry pies.
Ann took 5 of them to the school party.
How many pies did she leave at home?

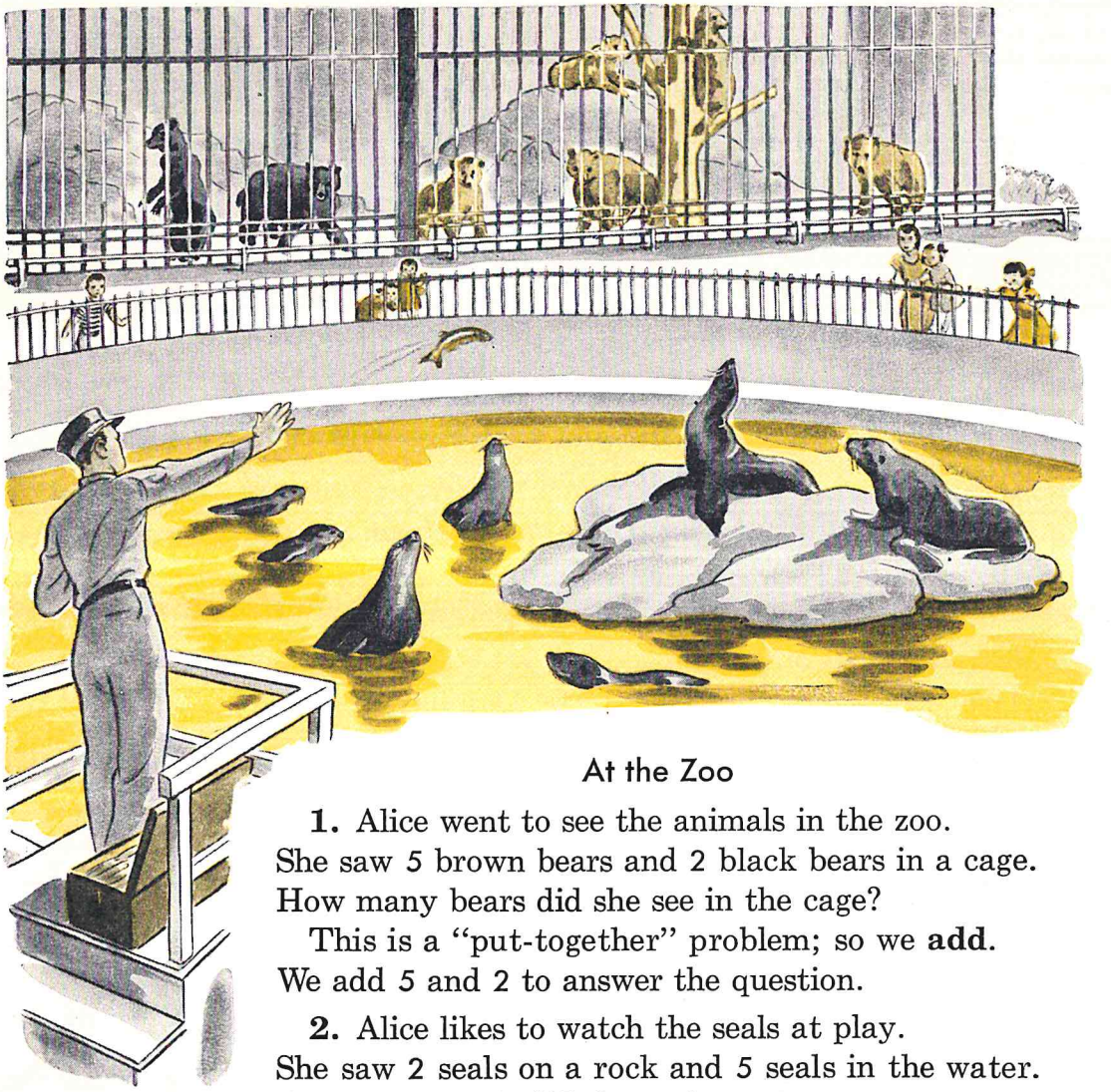


6. Jack had 7 cents. He used 3 cents to buy a paper with pictures of dogs in it.
How many cents did he have left?

7. Jane brought 6 cookies to school.
She gave 4 of them away.
How many cookies did she have left?

8. Say the answers:

7	6	5	7	5	7	6	6	4
−2	−4	−3	−4	−2	−3	−3	−1	−2



At the Zoo

1. Alice went to see the animals in the zoo.
She saw 5 brown bears and 2 black bears in a cage.
How many bears did she see in the cage?

This is a "put-together" problem; so we **add.**
We add 5 and 2 to answer the question.

2. Alice likes to watch the seals at play.
She saw 2 seals on a rock and 5 seals in the water.
How many seals did she see?

3. She saw the man feed the seals.
He threw fish, and the seals caught them.
One seal ate 4 fish, and another seal ate 3 fish.
How many fish did the two seals eat?

At the Circus

1. Jack and 7 other boys went to the circus.
How many boys were in this group?
One and seven are how many?

$$\begin{array}{r} 1 \\ +7 \\ \hline \end{array}$$

2. They saw 7 little monkeys in one cage
and 1 big monkey in another cage.
How many monkeys were in the two cages?
Seven and one are how many?

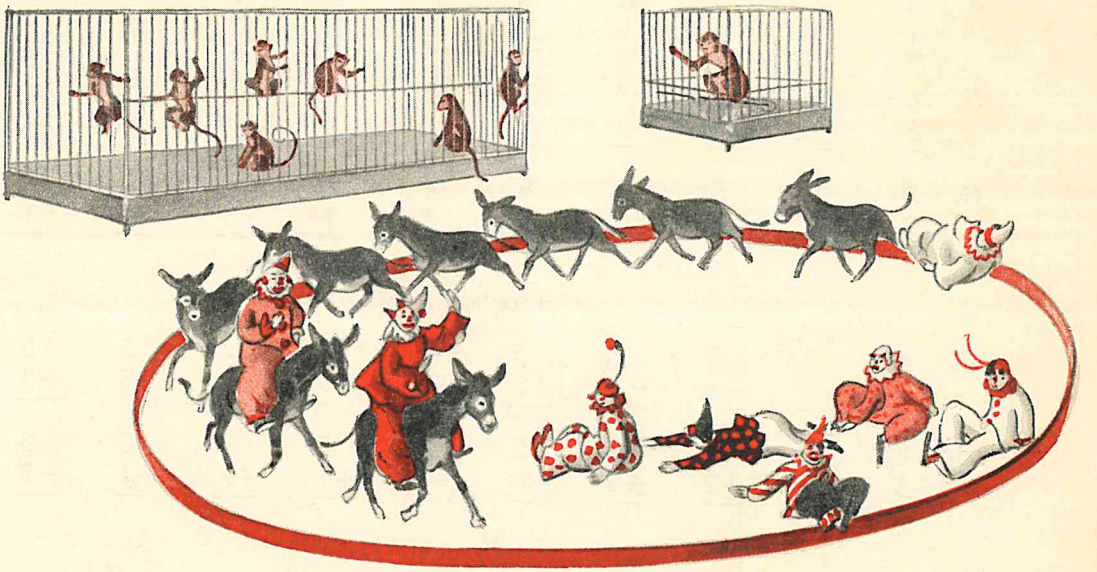
$$\begin{array}{r} 7 \\ +1 \\ \hline \end{array}$$

3. They saw 2 clowns at one end of the tent
and 6 clowns at the other end of the tent.
How many clowns did they see in the tent?
Two and six are how many?

$$\begin{array}{r} 2 \\ +6 \\ \hline \end{array}$$

4. Eight clowns were riding around the ring
on donkeys. Six of the clowns fell off.
Then how many clowns were left on the donkeys?
Six from eight is how many?

$$\begin{array}{r} 8 \\ -6 \\ \hline \end{array}$$



Do You Know? [Self-test]

Write the answer for each question that you know. Do not guess. If you do not know an answer, just go on to the next question.

Use dots to find any answer that you did not know. Then say it over and over so you will remember it.

Add:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
1.	2 1	1 2	2 2	5 1	1 5	6 1	1 6	4 2	2 4	1 1
2.	3 3	4 1	1 4	5 2	2 5	7 1	1 7	4 3	3 4	4 4
3.	6 2	2 6	3 2	2 3	5 3	3 5	3 1	1 3	2 5	3 4

Subtract:

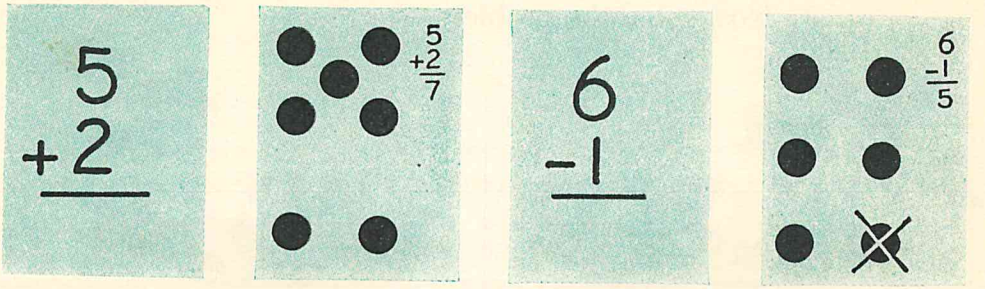
4.	3 1	3 2	4 2	6 1	6 5	7 1	7 6	6 2	6 4	2 1
5.	6 3	5 1	5 4	7 2	7 5	8 1	8 7	7 3	7 4	8 4
6.	8 2	8 6	5 2	5 3	8 3	8 5	4 1	4 3	7 5	7 3

Practice

7.	4 +3	3 +4	7 −4	7 −3	5 +2	2 +5	7 −5	7 −2	3 +5	5 +3
8.	8 −5	8 −3	6 +2	2 +6	8 −6	8 −2	7 +1	1 +7	8 −1	8 −7

Number Cards

Say the answers for the addition and subtraction questions on page 56 again.
This time make a number card for each question that you could not answer.



Here is the way we use a card:

Look at the front of the card and say the answer.
Say, "Five and two are seven."
Now look at the back of the card.
Did you say the right answer?
If you did, put that card in an "I-Know" pile.

If you cannot say the answer, do not guess.
Look at the back of the card and find the answer.
Then say over and over, "Five and two are seven."
Put this card in an "I-Do-Not-Know" pile.

When you have said the answers to the questions on all of your cards, you should study the cards in the "I-Do-Not-Know" pile. Work hard on them so you can put them in the "I-Know" pile.

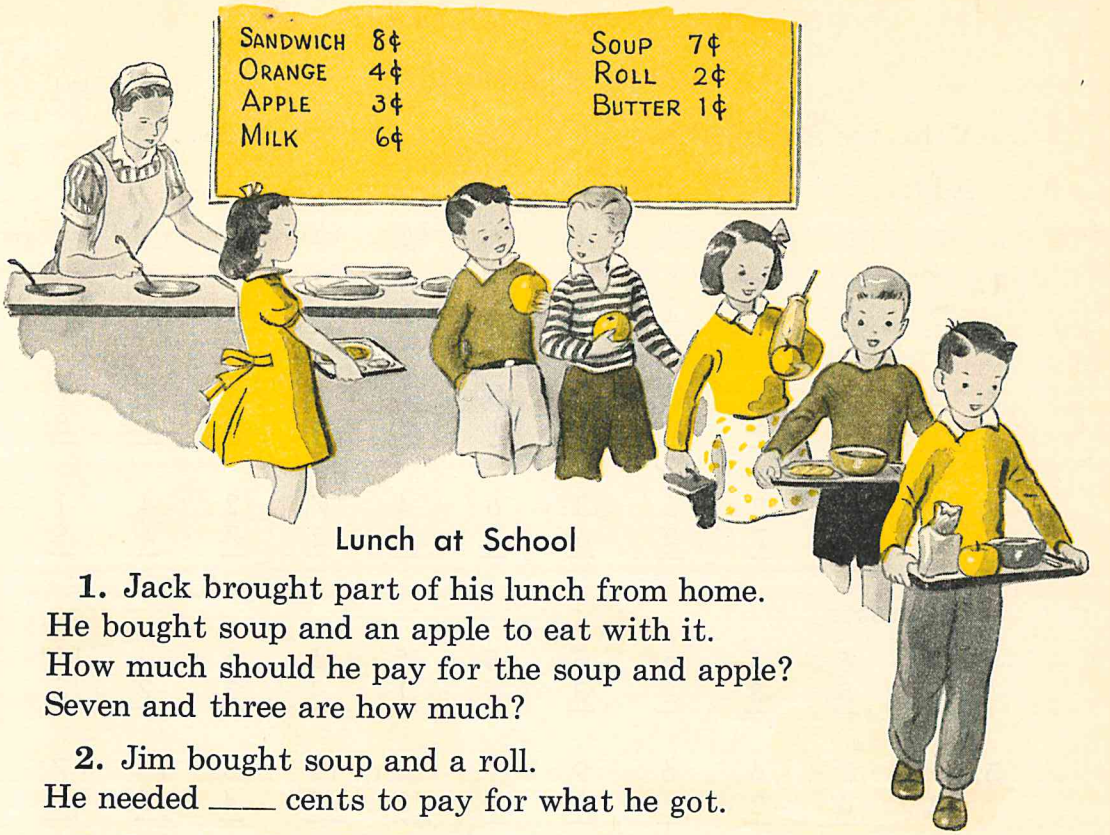
Use your number cards for subtraction the same way as you did your cards for addition.

Adding or Subtracting?

1. Look at each picture.
Does the picture show putting together (adding)?
Does the picture show taking away (subtracting)?

2. Make up a problem about each picture.

3. Now solve the problems.



Lunch at School

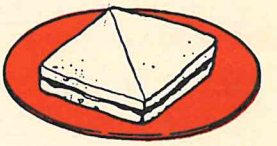
1. Jack brought part of his lunch from home.
He bought soup and an apple to eat with it.
How much should he pay for the soup and apple?
Seven and three are how much?

2. Jim bought soup and a roll.
He needed ____ cents to pay for what he got.

3. Jane bought a bottle of milk and an apple
to eat with the lunch she brought from home.
How much should she pay for them?

4. Jim got an orange, and Joe got an apple.
How much did Jim and Joe together pay for the fruit?

5. Alice bought a roll and butter.
How much did the roll and butter cost?



sandwich

6. Alice had a dime, or 10 cents.
The roll and butter together cost 3 cents.
How many cents did Alice have left?
Did she have enough money left to buy a sandwich?

Do You Know? [Self-test]

Write the answers on a piece of paper. Do not guess.

Add:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1.	2	3	4	1	4	2	3	2	1	5	5
	2	3	1	4	2	4	2	3	5	1	4
2.	5	6	1	5	3	8	1	4	3	7	2
	5	1	6	3	5	1	8	3	4	1	8
3.	1	7	3	6	3	6	4	7	2	4	1
	7	3	7	3	6	4	6	2	7	4	9

Subtract:

4.	6	6	5	5	8	8	5	5	6	4	10
	1	5	3	2	3	5	1	4	3	2	2
5.	7	7	6	6	9	9	10	10	8	10	7
	1	6	2	4	1	8	3	7	4	5	5
6.	7	7	8	8	10	10	9	9	9	9	10
	3	4	1	7	4	6	2	7	4	5	9

Practice

7.	4	8	5	1	4	9	5	7	9	10	5
	+5	−3	+2	+3	−3	−6	+4	−2	+1	−8	+2
8.	5	2	6	2	8	8	3	6	2	8	9
	−3	+5	−4	+3	+2	−5	−2	−3	+6	−6	−3
9.	1	6	10	10	3	7	9	8	2	9	4
	+9	+2	−1	−9	+1	−5	−6	−2	+8	−3	+5

Down by the Pond

1. Bob saw 8 frogs asleep on big leaves and 2 frogs swimming around in the water. How many frogs did he see altogether?

2. One day after a rain Bob went to the pond again. Two frogs were on the bank and 8 frogs on the leaves. How many frogs did he see this time?

Find the picture that goes with the problem. It may help you solve the problem.

3. Bob walked into the woods. When he came back, there were 10 frogs on the bank. Eight of the frogs jumped into the water.
How many frogs were left on the bank?

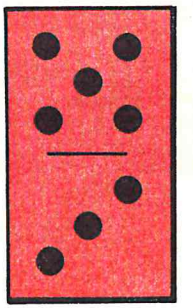
4. Bob watched the frogs catch bugs. Out went a tongue, and in went a bug! One frog ate 6 bugs, and the other ate 4. How many bugs did they both eat?

5. How many are 5 frogs and 5 frogs?

Practice

What two numbers does the domino show?

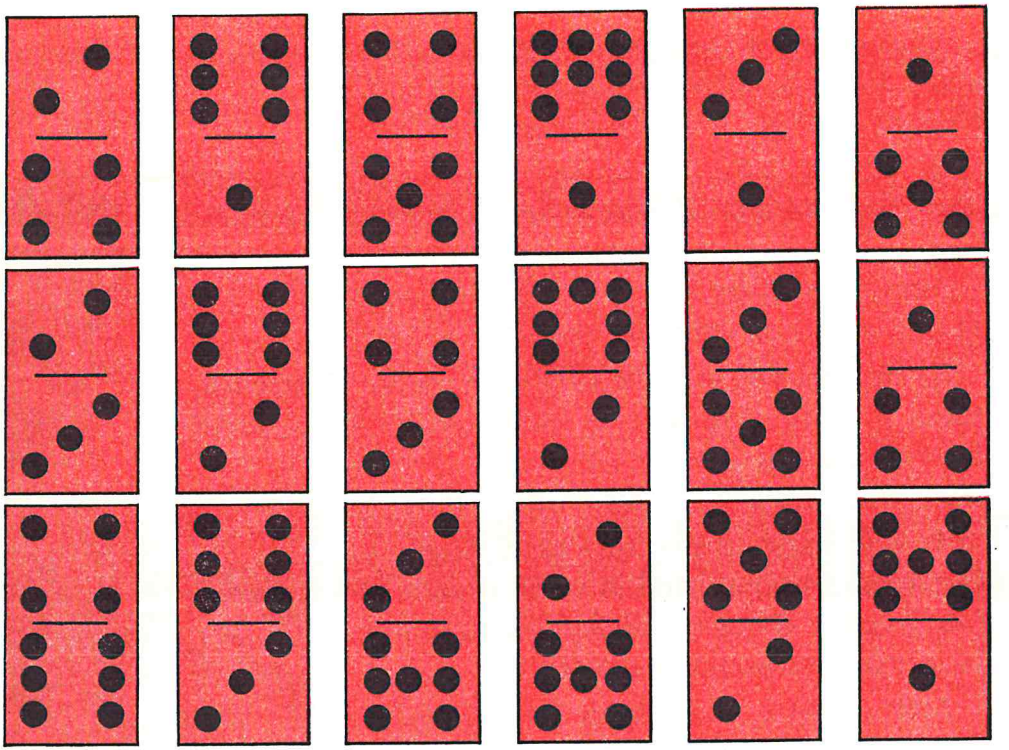
Think: Five and three are eight.
Three and five are eight.
Three from eight is five.
Five from eight is three.

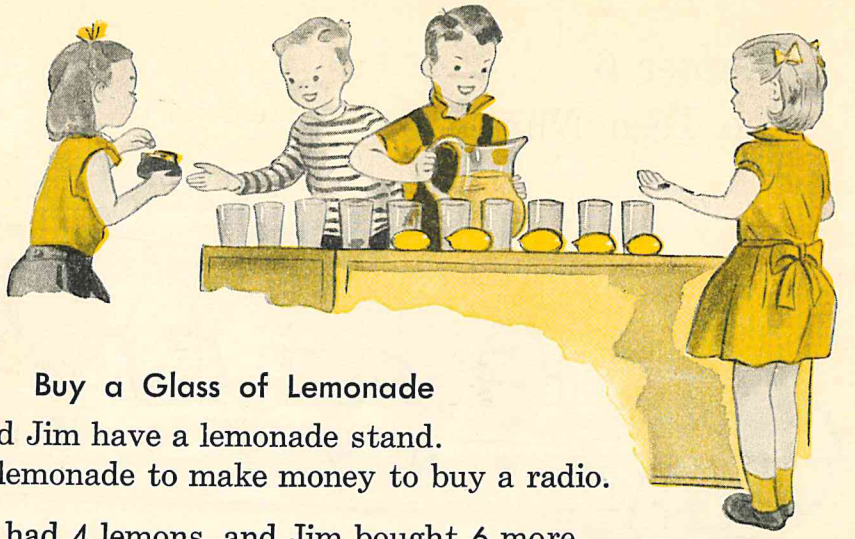


Write:

$$\begin{array}{r} 5 \\ +3 \\ \hline 8 \end{array} \qquad \begin{array}{r} 3 \\ +5 \\ \hline 8 \end{array} \qquad \begin{array}{r} 8 \\ -3 \\ \hline 5 \end{array} \qquad \begin{array}{r} 8 \\ -5 \\ \hline 3 \end{array}$$

Say and write the two additions
and the two subtractions that each domino shows:



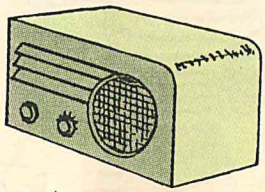


Buy a Glass of Lemonade

Jack and Jim have a lemonade stand.
They sell lemonade to make money to buy a radio.

1. Jack had 4 lemons, and Jim bought 6 more.
How many lemons did they have then?

2. Jack and Jim used 5 of their 10 lemons
to make lemonade to sell.
How many lemons did they have left?



radio

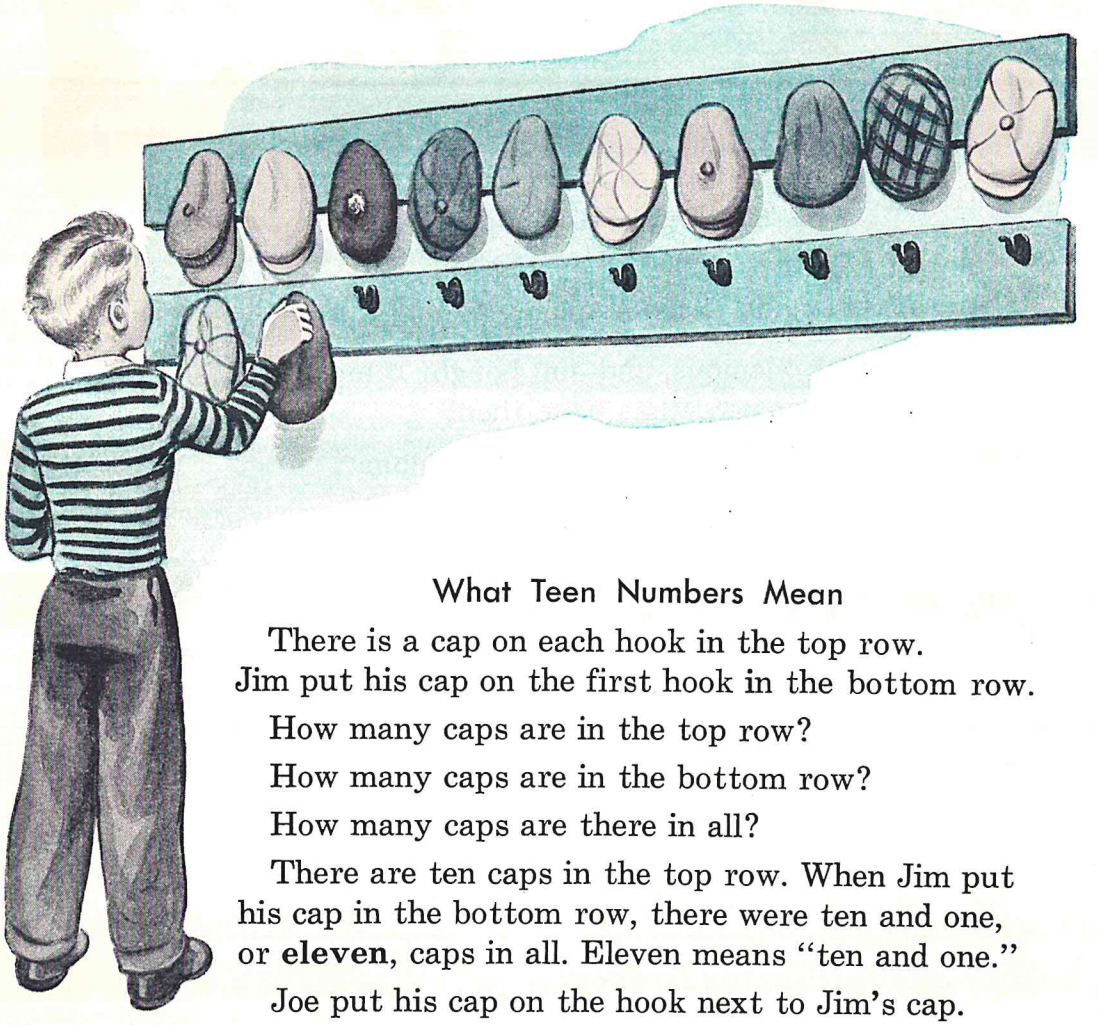
3. Jack sold 7 glasses, and Jim sold 3 glasses.
How many glasses of lemonade did they sell?

4. The boys used the other 5 lemons to make
more lemonade. This time they did not sell all
of it. They sold 8 glasses and drank 2 glasses.
How many glasses of lemonade did they make?

5. The boys counted their money.
Jack had 6 nickels in one pocket
and 3 nickels in his other pocket.
How many nickels did he have?

6. Jim said, "Here are four nickels,
and here are five more nickels.
I have ____ nickels in all."

Chapter 6
The Teen Numbers



What Teen Numbers Mean

There is a cap on each hook in the top row.
Jim put his cap on the first hook in the bottom row.

How many caps are in the top row?

How many caps are in the bottom row?

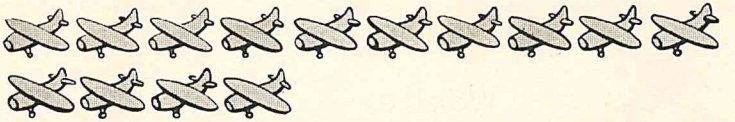
How many caps are there in all?

There are ten caps in the top row. When Jim put his cap in the bottom row, there were ten and one, or **eleven**, caps in all. Eleven means "ten and one."

Joe put his cap on the hook next to Jim's cap.
Now there are ten and two caps on the hooks.
Ten and two are **twelve**.
Twelve means "ten and two."

Read each number below. Then tell what it means.

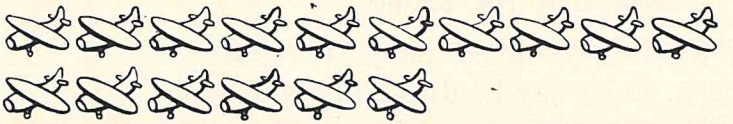
thirteen
13



fourteen
14

---

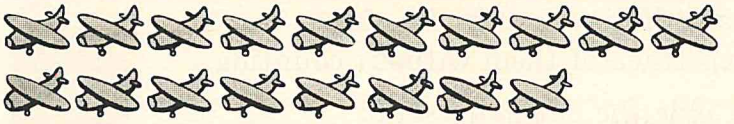
fifteen
15



sixteen
16

---

seventeen
17



eighteen
18

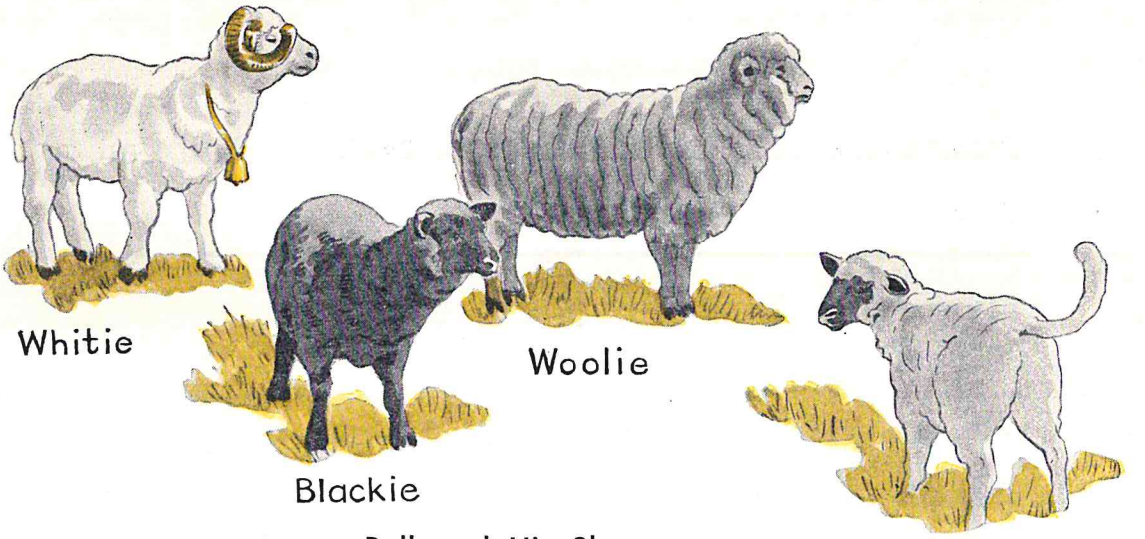
---

nineteen
19

---

twenty
20

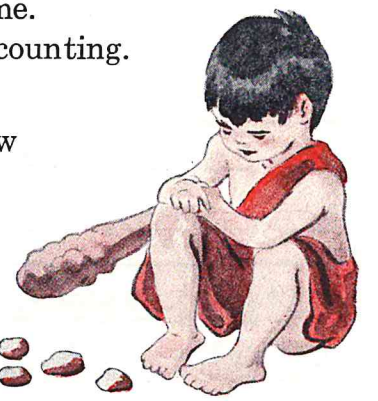
Twenty means "two tens."



Bell and His Sheep

Bell was a little boy who lived many years ago. He had four sheep. Each day he drove his four sheep to the pasture. He watched over them as they ate the long green grass.

Bell could not count. He could not tell you that he had four sheep. He did not know the number names. But he knew each of his sheep by its name. So he could keep track of them without counting.



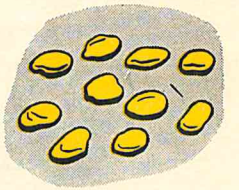
As Bell grew older he got more sheep. Then he had to find another way to know if any of his sheep were gone.

He used one pebble for each sheep. Every night as a sheep walked by him, he put down a pebble for that sheep. If he put down all his pebbles, he knew that all his sheep were there.

How did he know when one was gone?

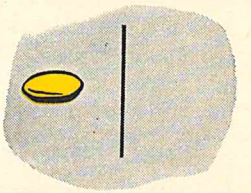
Bell Gets Many Sheep

Bell got more sheep each year. After a few years he had many sheep. That meant that he had to have many pebbles.

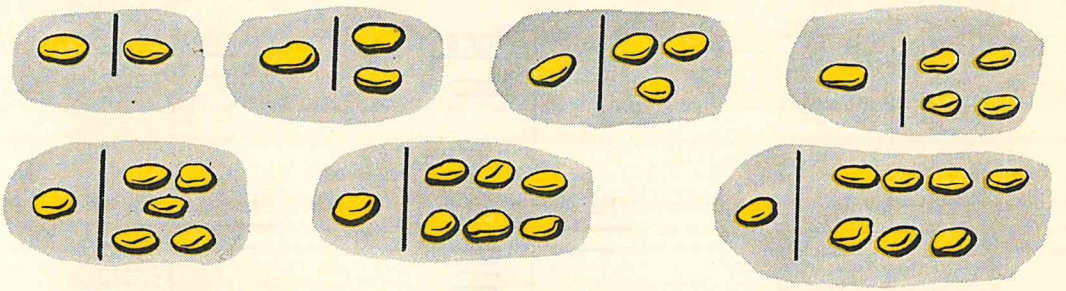


"I have a lot of sheep and a lot of pebbles," thought Bell. "I must find a better way to keep track of my sheep."

He put down one pebble for each sheep until he had ten pebbles on the ground in front of him. Then he picked up all the pebbles and put down one pebble in a new place at the left of the mark in the sand. This pebble showed that he had counted ten sheep. Then he started over. Now as he put down pebbles, they would show **ten and one**, **ten and two**, **ten and three**, and so on.



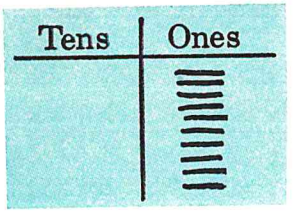
What do the pebbles in each picture show?

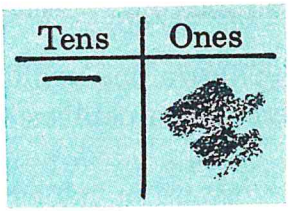


When Bell had put down ten more pebbles, he picked them up and put another pebble with the pebble that stood for ten sheep. Now he had counted **two tens**. We say he counted **twenty**.

Better Ways of Counting

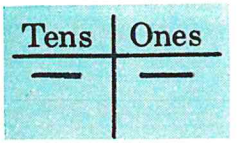
Many years later Bell found that he could make marks in **columns** to show tens and ones. When he counted a group of ten, he made ten marks in the column for ones. Then he rubbed out the ten marks and made one mark in the column for tens.

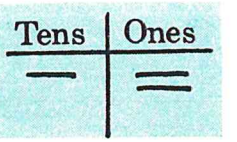


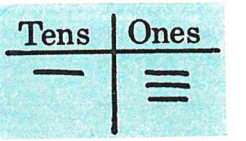


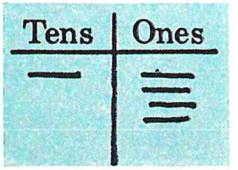
The mark in the column for tens showed that he had counted one ten. He knew that **ten ones** and **one ten** were the same.

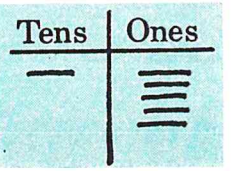
These pictures show how Bell counted eleven, twelve, thirteen, fourteen, fifteen, and so on.

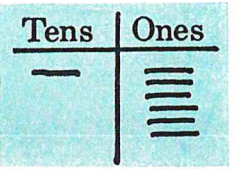












What number does each picture show? Why?

Make marks in columns to show seventeen, eighteen, nineteen, and twenty.

Using Figures to Write Numbers

Later on Bell found a better way to show **tens** and **ones**. He wrote figures in the columns instead of making marks.

The columns on the left side of the page show how Bell used marks to write tens and ones. On the right side of the page we see how Bell used figures to write tens and ones.

Tens	Ones		Tens	Ones
—	—	eleven one ten and one	1	1
—	=	twelve one ten and two	1	2
—	≡	thirteen one ten and three	1	3
—	≡	fourteen one ten and four	1	4
—	≡	fifteen one ten and five	1	5

Write figures in columns to show sixteen, seventeen, eighteen, nineteen, and twenty as Bell did.

What does each figure mean?

Ten's Place and One's Place

People used columns to write tens and ones for a long time. They did not have **zero** (0), and they did not need it. The empty column showed there were no ones. Then they learned to write numbers as we do now.

Here are some numbers written in three ways:

Tens	Ones	Tens	Ones	
—		1		10
—	—	1	1	11
—	≡	1	5	15
=		2		20

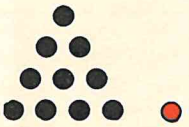
We do not use columns when we write numbers. But we have 0. We use 0 with 1 when we write 10. The 0 in 10 shows that the 1 means "1 ten." The 0 puts the 1 in ten's place, and the 0 tells us there are no ones.

The 0 in 20 puts the 2 in ten's place. The 0 in 20 shows that the 2 means "2 tens," and the 0 tells us there are no ones.

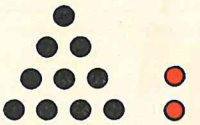
Figures Show What Numbers Mean

We often call the numbers from eleven to nineteen the **teen** numbers. Say the teen numbers in order. Did you hear something like "four-ten, five-ten, six-ten, seven-ten, eight-ten, nine-ten"?

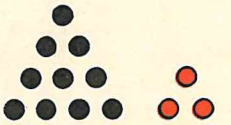
Each of the teen numbers means "a group of ten and so many more."



eleven
ten and one
11



twelve
ten and two
12



thirteen
ten and three
13

Make a dot picture of each number from thirteen to nineteen. Tell what each picture shows.

When we write the figures for any teen number, the figures tell the same things as our dots show.
The 1 in ten's place means "1 ten."
The 3 in one's place means "3 ones."

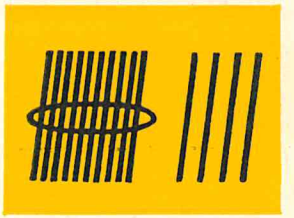
13

What does each figure show in the numbers below?

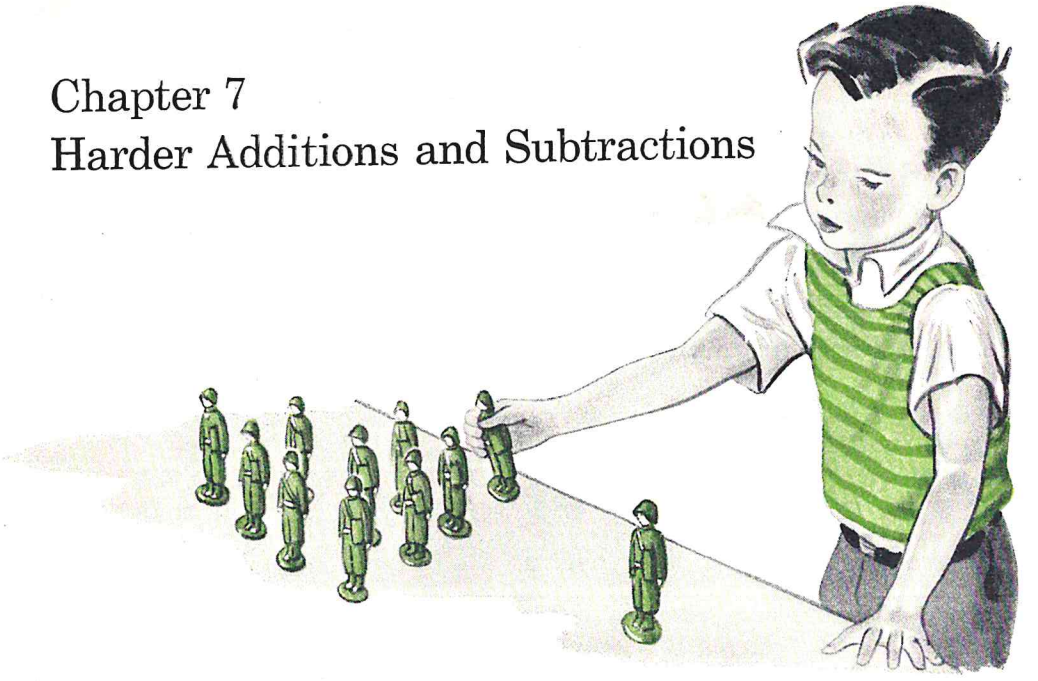
12 17 19 15 18 16 11 20 14

Say the word that belongs in each blank:

1. One ten and one more are *eleven*.
2. One ten and six more are _____.
3. One ten and nine more are _____.
4. Twelve is one ten and _____ more.



Chapter 7
Harder Additions and Subtractions



Eleven

"Let us see what we can learn about eleven," said Miss Brown. "Joe, will you put the soldiers on the table to show ten and one?

$$\begin{array}{rr} 9 & 2 \\ +2 & +9 \\ \hline 11 & 11 \end{array}$$

"Now move one of the ten soldiers
over with the soldier by itself.
We have nine and two, or two and nine.
But we have the same eleven soldiers.
So we know nine and two are eleven,
and we know two and nine are eleven."

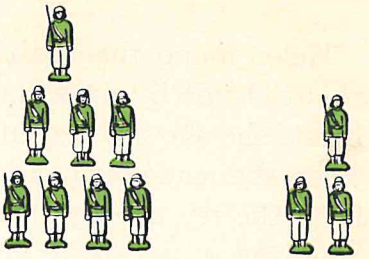
$$\begin{array}{rr} 11 & 11 \\ -2 & -9 \\ \hline 9 & 2 \end{array}$$

"Cover the two soldiers with your hand.
How many soldiers are left?" asked Miss Brown.

"Two from eleven is nine," said Joe.
Then Joe covered nine soldiers,
and said, "Nine from eleven is two."

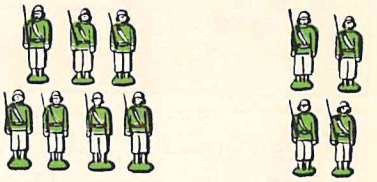
Joe moved one soldier at a time and learned more about eleven.

Eight and three are eleven.
Three and eight are eleven.
Three from eleven is eight.
Eight from eleven is three.



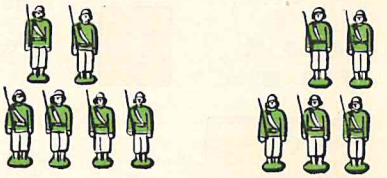
$$\begin{array}{rrrr} 8 & 3 & 11 & 11 \\ +3 & +8 & -3 & -8 \\ \hline \end{array}$$

How many are seven and four?
How many are four and seven?
Four from eleven is how many?
Seven from eleven is how many?



$$\begin{array}{rrrr} 7 & 4 & 11 & 11 \\ +4 & +7 & -4 & -7 \\ \hline \end{array}$$

How many are six and five?
How many are five and six?
Five from eleven is how many?
Six from eleven is how many?



$$\begin{array}{rrrr} 6 & 5 & 11 & 11 \\ +5 & +6 & -5 & -6 \\ \hline \end{array}$$

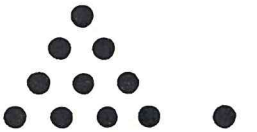
The Whole Story about Eleven

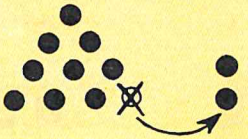
$$\begin{array}{rrrrrrrr} 9 & 8 & 7 & 6 & 5 & 4 & 3 & 2 \\ +2 & +3 & +4 & +5 & +6 & +7 & +8 & +9 \\ \hline 11 & 11 & 11 & 11 & 11 & 11 & 11 & 11 \end{array}$$

$$\begin{array}{rrrrrrrr} 11 & 11 & 11 & 11 & 11 & 11 & 11 & 11 \\ -2 & -3 & -4 & -5 & -6 & -7 & -8 & -9 \\ \hline 9 & 8 & 7 & 6 & 5 & 4 & 3 & 2 \end{array}$$

Eleven

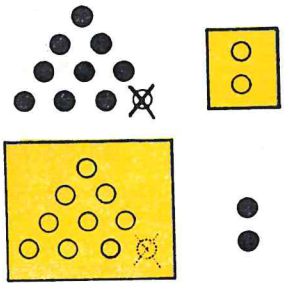
Helen found the additions and subtractions about eleven by drawing dot pictures.
First, she showed eleven as ten and one.
Then she made believe that she moved a dot from the ten over with the one dot.
She drew a picture to show this.





She thought:	*She wrote:*	
Nine and two are eleven.	9 +2 = 11	2 +9 = 11
Two and nine are eleven.		

Helen covered 2 dots to show that she was going to take them away. Then she covered nine dots.



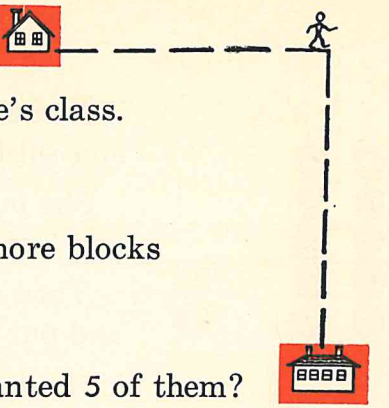
She thought:	*She wrote:*
Two from eleven is nine.	11 −2 = 9
Nine from eleven is two.	11 −9 = 2

Draw dots as Helen did to find all the additions and subtractions about eleven. Write them.

Say and write the answers:

1.	9 +2	11 −3	11 −6	4 +7	5 +6	11 −4	11 −7	6 +5
2.	8 +3	11 −5	11 −2	2 +9	7 +4	11 −8	11 −9	3 +8

Problems



1. There are 6 girls and 5 boys in Jane's class.
How many children are in her class?

2. Joe walks 11 blocks to school.
After he has walked 5 blocks, how many more blocks has he to walk?

3. Jane had 9 packages of flower seed.
How many packages were left after she planted 5 of them?

4. Helen had 11 cookies and ate 4 of them.
How many cookies did she have left?

5. Jack's father sold 8 of his 10 pigs.
How many pigs did he have left?

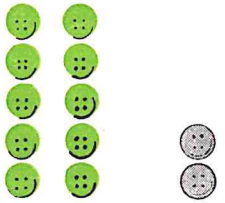
6. Jack's father has 2 pigs. Yesterday he sold 8 pigs.
How many pigs did he have at first?

7. Jack's father sold 6 of his 10 cows.
How many cows did he have left?

Write the answers to these questions:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
8.	7 +2	5 +4	10 −7	8 −3	4 +4	8 −6	6 −2	3 +6	9 −6
9.	3 +4	5 +3	11 −8	9 −4	5 +5	8 −5	7 −3	5 +2	2 +9
10.	11 −6	7 +4	11 −3	9 +2	3 +8	6 +5	4 +6	3 +7	11 −7
11.	3 +2	5 −3	6 −4	4 −3	2 +5	1 +8	9 −7	9 −2	5 +6

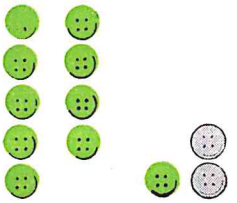
Twelve



Ann used buttons to find the additions and subtractions about twelve.

She put 10 buttons together in a group and 2 more buttons beside them.

Then she moved one button from the ten and put it with the two buttons.



She thought:

Nine and three are twelve.
Three and nine are twelve.

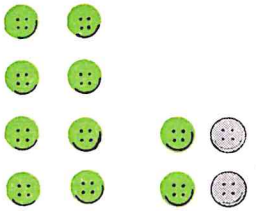
$$\begin{array}{r} 9 \\ +3 \\ \hline 12 \end{array} \qquad \begin{array}{r} 3 \\ +9 \\ \hline 12 \end{array}$$

Ann covered 3 buttons with her hand. Then she covered the 9 buttons.

She thought:

Three from twelve is nine.
Nine from twelve is three.

$$\begin{array}{r} 12 \\ -3 \\ \hline 9 \end{array} \qquad \begin{array}{r} 12 \\ -9 \\ \hline 3 \end{array}$$



Ann moved another button. Then she covered each group.

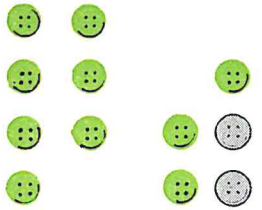
She thought:

Eight and four are twelve.
Four and eight are twelve.

$$\begin{array}{r} 8 \\ +4 \\ \hline 12 \end{array} \qquad \begin{array}{r} 4 \\ +8 \\ \hline 12 \end{array}$$

Four from twelve is eight.
Eight from twelve is four.

$$\begin{array}{r} 12 \\ -4 \\ \hline 8 \end{array} \qquad \begin{array}{r} 12 \\ -8 \\ \hline 4 \end{array}$$



When Ann moved the next button, she answered these questions:

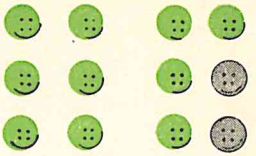
Seven and five are how many?
Five and seven are how many?

$$\begin{array}{r} 7 \\ +5 \\ \hline \end{array} \qquad \begin{array}{r} 5 \\ +7 \\ \hline \end{array}$$

Five from twelve is how many?
Seven from twelve is how many?

$$\begin{array}{r} 12 \\ -5 \\ \hline \end{array} \qquad \begin{array}{r} 12 \\ -7 \\ \hline \end{array}$$

When Ann moved one more button,
there were six buttons in each group.

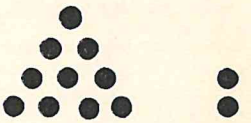


Six and six are how many?
Six from twelve is how many?

$$\begin{array}{r} 6 \\ +6 \\ \hline \end{array} \qquad \begin{array}{r} 12 \\ -6 \\ \hline \end{array}$$

Use sticks to study about twelve.
First, show twelve as ten and two.
Write what you find out.

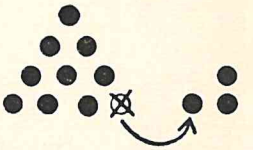
Jim said, "I use dots to find the additions
and subtractions about twelve.
I cross out one of the ten dots and move it
over with the two dots."



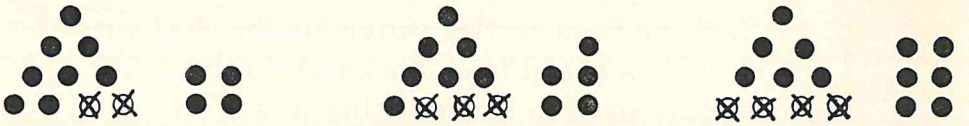
Nine and three are how many?

"I put my finger over three dots.
I think: Three from twelve is nine."

"I put my finger over nine dots.
I think: Nine from twelve is three."



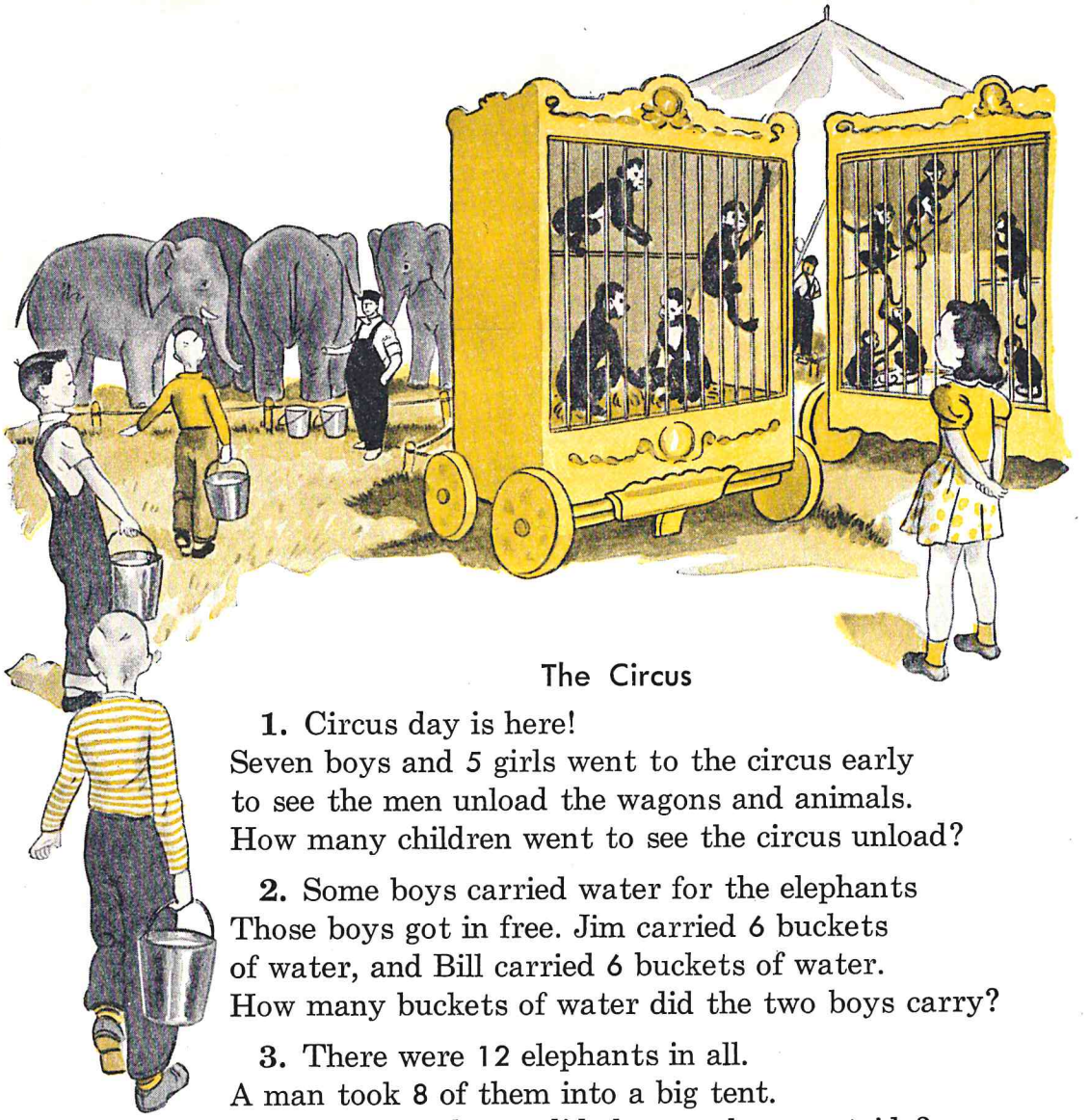
Think and write the additions and subtractions
that Jim's pictures show:



This is what Ann learned about twelve:

$$\begin{array}{r} 9 \\ +3 \\ \hline 12 \end{array} \quad \begin{array}{r} 8 \\ +4 \\ \hline 12 \end{array} \quad \begin{array}{r} 7 \\ +5 \\ \hline 12 \end{array} \quad \begin{array}{r} 6 \\ +6 \\ \hline 12 \end{array} \quad \begin{array}{r} 5 \\ +7 \\ \hline 12 \end{array} \quad \begin{array}{r} 4 \\ +8 \\ \hline 12 \end{array} \quad \begin{array}{r} 3 \\ +9 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 12 \\ -3 \\ \hline 9 \end{array} \quad \begin{array}{r} 12 \\ -4 \\ \hline 8 \end{array} \quad \begin{array}{r} 12 \\ -5 \\ \hline 7 \end{array} \quad \begin{array}{r} 12 \\ -6 \\ \hline 6 \end{array} \quad \begin{array}{r} 12 \\ -7 \\ \hline 5 \end{array} \quad \begin{array}{r} 12 \\ -8 \\ \hline 4 \end{array} \quad \begin{array}{r} 12 \\ -9 \\ \hline 3 \end{array}$$



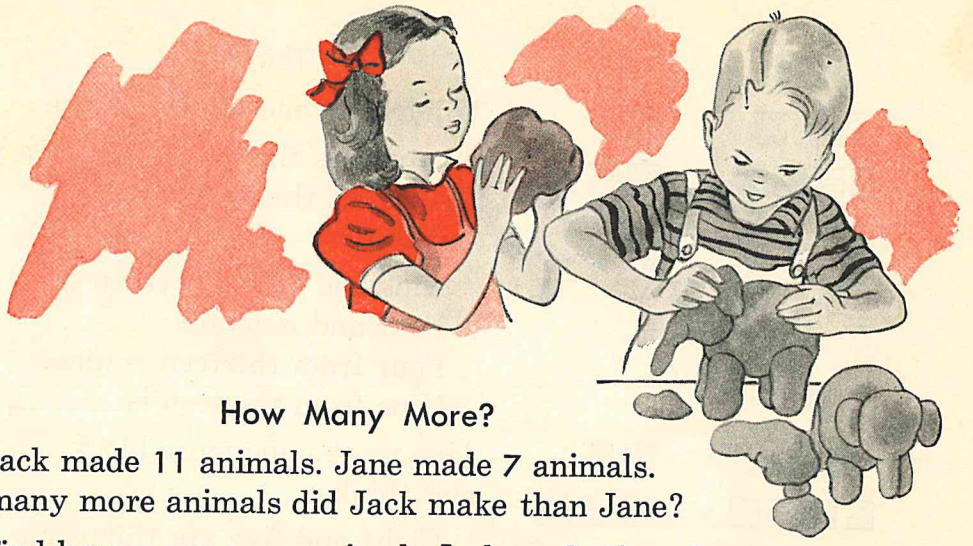
The Circus

1. Circus day is here!
Seven boys and 5 girls went to the circus early
to see the men unload the wagons and animals.
How many children went to see the circus unload?

2. Some boys carried water for the elephants
Those boys got in free. Jim carried 6 buckets
of water, and Bill carried 6 buckets of water.
How many buckets of water did the two boys carry?

3. There were 12 elephants in all.
A man took 8 of them into a big tent.
How many elephants did the man leave outside?

4. Jane saw 6 little monkeys in one cage
and 4 big monkeys in another cage.
How many monkeys did she see in the two cages?



How Many More?

1. Jack made 11 animals. Jane made 7 animals.
How many more animals did Jack make than Jane?

To find how many more animals Jack made than Jane, we can match Jane's animals and Jack's animals.

Jack

Jane

There is an easier way to compare seven and eleven.
We can subtract seven from eleven.
The figures ask: **Eleven is how many more than seven?**
Jack made 4 more animals than Jane made.

$$\begin{array}{r} 11 \\ -7 \\ \hline \end{array}$$

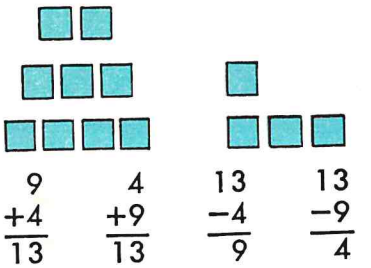
We subtract to find how many more.

2. Bill made 12 animals, and Sue made 8 animals.
How many more animals has Bill made than Sue?
Twelve is how many more than eight?

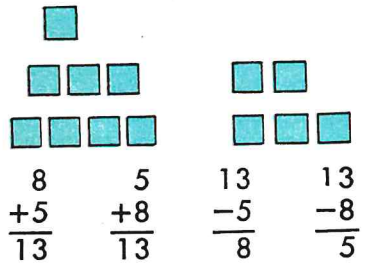
$$\begin{array}{r} 12 \\ -8 \\ \hline \end{array}$$

3. Joe has 12 marbles, and Jim has 9 marbles.
How many more marbles has Joe than Jim?

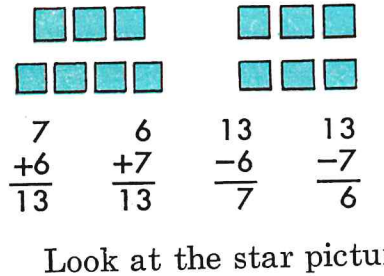
$$\begin{array}{r} 12 \\ -9 \\ \hline \end{array}$$



$$\begin{array}{r} 9 \\ +4 \\ \hline 13 \end{array} \qquad \begin{array}{r} 4 \\ +9 \\ \hline 13 \end{array} \qquad \begin{array}{r} 13 \\ -4 \\ \hline 9 \end{array} \qquad \begin{array}{r} 13 \\ -9 \\ \hline 4 \end{array}$$



$$\begin{array}{r} 8 \\ +5 \\ \hline 13 \end{array} \qquad \begin{array}{r} 5 \\ +8 \\ \hline 13 \end{array} \qquad \begin{array}{r} 13 \\ -5 \\ \hline 8 \end{array} \qquad \begin{array}{r} 13 \\ -8 \\ \hline 5 \end{array}$$



$$\begin{array}{r} 7 \\ +6 \\ \hline 13 \end{array} \qquad \begin{array}{r} 6 \\ +7 \\ \hline 13 \end{array} \qquad \begin{array}{r} 13 \\ -6 \\ \hline 7 \end{array} \qquad \begin{array}{r} 13 \\ -7 \\ \hline 6 \end{array}$$

Thirteen

Thirteen is one ten and three.

Jane moves the blocks one at a time.
She moves the first block
and thinks:

Nine and four are thirteen.
Four and nine are _____.
Four from thirteen is nine.
Nine from thirteen is _____.

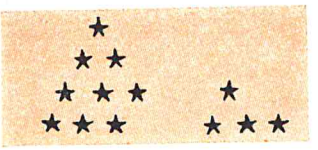
Jane moves one more block
and thinks:

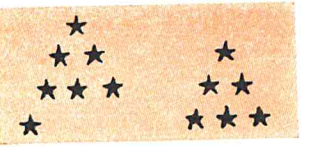
Eight and five are thirteen.
Five and eight are _____.
Five from thirteen is eight.
Eight from thirteen is _____.

Jane moves another block.

Seven and six are how many?
Six and seven are how many?
Six from thirteen is how many?
Seven from thirteen is how many?

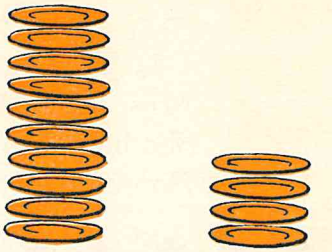
Look at the star pictures.
Say the additions and subtractions
about thirteen that the stars show.
Why do we start with ten and three?
What did we do to get the next picture?





Fourteen

Helen used her doll plates
to study about fourteen.
She put ten plates in one pile
and four plates in another pile.
Then she took one plate from the ten
and put it over with the four plates.



She thought:

Nine and five are fourteen.
Five and nine are _____.
Nine from fourteen is five.
Five from fourteen is _____.

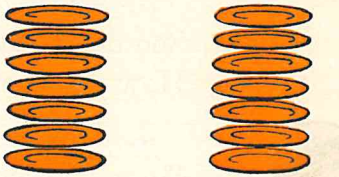
She wrote:

9	5	14	14
+5	+9	−9	−5
14	14	5	9

Helen moved another plate.

She wrote:

8	6	14	14
+6	+8	−6	−8
14	14	8	6



What did she say?

Helen took 1 of the 8 plates
and put it with the 6 plates.
There were 7 plates in each pile.

Seven and seven are how many?
Seven from fourteen is how many?

7	14
+7	−7
14	7

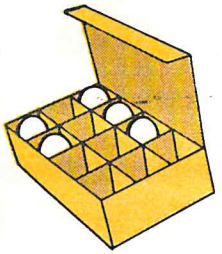
Write the additions and subtractions
about fourteen without looking at the pictures:

9	5	8	6	7	14	14	14	14	14
+5	+	+	+	+	−9	−8	−5	−7	−6
14	14	14	14	14	5				

How Many More Are Needed?

1. There are 12 boys playing at Jack's house.
Mrs. White wants to give an apple to each of them.
She has 6 apples in a bowl on the table.
How many more apples does she need?

$$\begin{array}{r} 12 \\ -6 \\ \hline \end{array}$$



You can make a picture to help you find how many apples she needs. Or you can subtract to find out. Twelve is how many more than six?

2. Mrs. Allen needs 12 eggs to make a cake.
She has only 5 eggs. So she needs more eggs.
How many more eggs does she need?

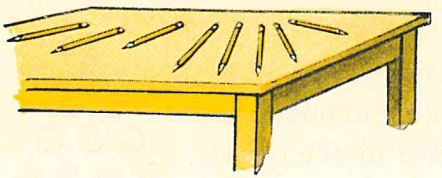
3. Alice wants to send a card to each of 14 girls.
She does not have enough cards. She has only 8 cards.
How many more cards does she need?

4. Jim wants to buy a top that costs 14 cents.
He has 7 cents.
How many more cents does he need to buy the top?

5. The book Mary wants to buy costs 14 cents.
Mary counted her money. She has 9 cents.
How many more cents does she need?

6. A ticket to the show costs 14 cents.
Jack has only 6 cents.
How many more cents does he need for a ticket?

We subtract to find how many more are needed.



How Many Are Gone?

Miss Brown put 8 pencils on the table.

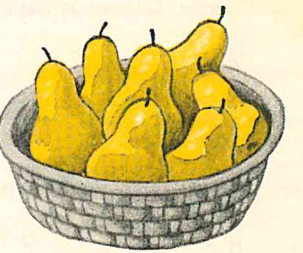
She said, "I am going to take away some pencils, but I will not tell how many. You must find that. I will tell how many are left. I have five left. How many pencils are gone?"

We subtract the number (5) we had left from the number (8) we had at first to find how many are gone.

$$\begin{array}{r} 8 \\ -5 \\ \hline 3 \end{array}$$

1. "I had fourteen marbles. I lost some of them, and now I have only five marbles," said Jack. "How many marbles have I lost?"

2. Jack put his 13 rabbits in the pen last night. Some of the rabbits got out and ran away. This morning only 6 rabbits were in the pen. How many rabbits were gone?

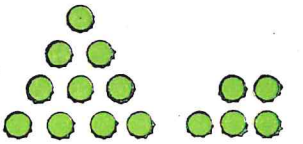


3. There are 7 pears in the basket. Last night there were 13 pears in the basket. How many pears are gone?

4. Jane put 13 doll dresses on the line to dry. The wind blew some of them away. Jane found 8. How many doll dresses are gone?

Fifteen

Jack used bottle caps to work out the additions and subtractions about fifteen. He put 10 in one group and 5 in the other.



"When I move one cap from the ten over with the five, I learn four things about fifteen," said Jack.

Nine and six are how many?
Six and nine are how many?
Six from fifteen is _____.
Nine from fifteen is _____.

The picture shows what Jack did next.

Eight and seven are _____.
Seven and eight are _____.
Eight from fifteen is _____.
Seven from fifteen is _____.

Now use books, pencils, or anything you like to find the additions and subtractions about fifteen.

Are these what you found?

9	6	8	7	15	15	15	15
+6	+9	+7	+8	−9	−6	−8	−7
15	15	15	15	6	9	7	8

Say the answers. Watch the signs.

8	7	9	6	14	12	13	15	15	7
+6	+5	+4	+9	−8	−7	−8	−8	−6	+7
6	13	5	14	15	8	3	2	7	5
+7	−7	+6	−7	−9	+4	+8	+9	+8	+9

How Many Fewer?

1. Mary bought 14 cards. Ann bought 8 cards.
How many **fewer** cards did Ann buy than Mary?
Eight is how many less than fourteen?

$$\begin{array}{r} 14 \\ -8 \\ \hline 6 \end{array}$$

2. Jane carried 15 books, and Sue carried 7 books.
How many fewer books did Sue carry than Jane?
How many more books did Jane carry than Sue?

3. Tom and Bill walked to school this morning.
Tom walked **farther** than Bill. Tom lives 15 blocks
from school, and Bill lives 8 blocks from school.
How many fewer blocks did Bill walk than Tom?

$$\begin{array}{r} 15 \\ -8 \\ \hline \end{array}$$

4. Bill has 15 cents, and Joe has 9 cents.
How many fewer cents has Joe than Bill?

$$\begin{array}{r} 15 \\ -9 \\ \hline \end{array}$$

5. Jack gave 15 cents to the Red Cross on Monday
and 6 cents on Tuesday.
How many fewer cents did he give the Red Cross
on Tuesday than on Monday?

6. The large bowl has 12 flowers in it,
and the small bowl has 6 flowers in it.
How many fewer flowers are in the small bowl?

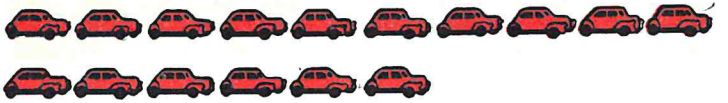
7. Jane has 14 Savings Stamps, and Jack has 6.
How many fewer Savings Stamps has Jack than Jane?

To find how many fewer, we subtract.

Sixteen

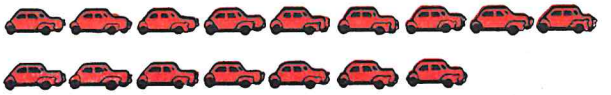
We can use Jerry's cars to find the additions and subtractions about sixteen.

How does the picture below show sixteen?



$$\begin{array}{r} 10 \\ +6 \\ \hline 16 \end{array} \qquad \begin{array}{r} 6 \\ +10 \\ \hline 16 \end{array}$$

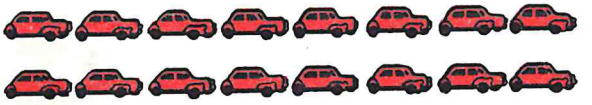
Imagine that you move one car from the group of ten down with the group of six cars.



$$\begin{array}{r} 9 \\ +7 \\ \hline 16 \end{array} \qquad \begin{array}{r} 7 \\ +9 \\ \hline 16 \end{array} \qquad \begin{array}{r} 16 \\ -7 \\ \hline 9 \end{array} \qquad \begin{array}{r} 16 \\ -9 \\ \hline 7 \end{array}$$

How many cars are there in each group now? Say and write the additions and subtractions that the picture shows.

Now imagine that you move two cars from the ten and put them with the six cars.
How many cars are there in each group?



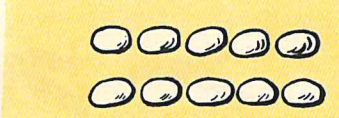
$$\begin{array}{r} 8 \\ +8 \\ \hline 16 \end{array} \qquad \begin{array}{r} 16 \\ -8 \\ \hline 8 \end{array}$$

The cars show one addition and one subtraction. What are they? Write them.

Think and say: $\begin{array}{r} 9 \\ +7 \\ \hline 16 \end{array}$ $\begin{array}{r} 16 \\ -7 \\ \hline 9 \end{array}$ $\begin{array}{r} 8 \\ +8 \\ \hline 16 \end{array}$ $\begin{array}{r} 16 \\ -9 \\ \hline 7 \end{array}$ $\begin{array}{r} 7 \\ +9 \\ \hline 16 \end{array}$ $\begin{array}{r} 16 \\ -8 \\ \hline 8 \end{array}$

Seventeen and Eighteen

We show seventeen with one ten and seven ones.
The first picture shows ten pebbles in one group
and seven pebbles in another group.



$$\begin{array}{r} 10 \\ +7 \\ \hline 17 \end{array}$$

Move one pebble from the ten over with the seven.
We still have the same seventeen pebbles, but now
we have 9 pebbles in one group and 8 in the other.

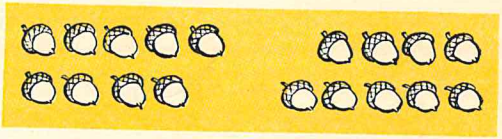
Nine and eight are how many? $\begin{array}{r} 9 \\ +8 \\ \hline 17 \end{array}$

Eight and nine are how many? $\begin{array}{r} 8 \\ +9 \\ \hline 17 \end{array}$

Nine from seventeen is how many? $\begin{array}{r} 17 \\ -9 \\ \hline 8 \end{array}$

Eight from seventeen is how many? $\begin{array}{r} 17 \\ -8 \\ \hline 9 \end{array}$

We show eighteen with one ten and eight ones.
The first picture shows ten acorns in one group
and eight acorns in another group.
When we move one acorn from the group of ten
and put it with the eight, we get nine and nine.



Nine and nine are how many? $\begin{array}{r} 9 \\ +9 \\ \hline 18 \end{array}$

Nine from eighteen is how many? $\begin{array}{r} 18 \\ -9 \\ \hline 9 \end{array}$

Think and say: $\begin{array}{r} 9 \\ +9 \\ \hline 18 \end{array}$ $\begin{array}{r} 9 \\ +8 \\ \hline 17 \end{array}$ $\begin{array}{r} 17 \\ -9 \\ \hline 8 \end{array}$ $\begin{array}{r} 8 \\ +9 \\ \hline 17 \end{array}$ $\begin{array}{r} 17 \\ -8 \\ \hline 9 \end{array}$ $\begin{array}{r} 18 \\ -9 \\ \hline 9 \end{array}$

Problems

Read each problem carefully. Think what it tells. What question does it ask? Then think what you should do to answer the question. Should you put things together? Should you take them away? Or should you compare them?

1. Six black birds were eating worms on the ground. Soon 4 other black birds came to eat with them. How many birds were eating together then?

2. A car came by and scared five of the ten black birds away. How many black birds stayed?

3. Jim had 3 marbles. Jack gave him 8 more. How many marbles did Jim have then?

4. Jack had 11 apples. He gave 9 of them away. How many apples did he have left?

5. There are 13 girls and 8 boys in Jane's class. How many more girls than boys are in the class?

6. Ann must get thirteen pencils for the girls. She has six pencils now. How many more pencils should she get?

$$\begin{array}{r} 13 \\ -6 \\ \hline \end{array}$$

7. One day Jim earned 16 cents selling papers. Jack earned 9 cents that same day. How much less did Jack earn that day than Jim?

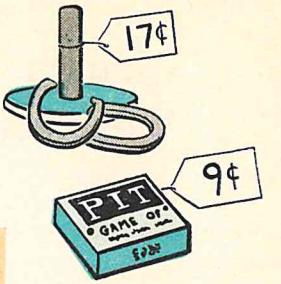
$$\begin{array}{r} 16 \\ -9 \\ \hline \end{array}$$

8. Jim gave Mr. Day 9 cents for a top and 5 cents for a pencil. How many cents did Jim give Mr. Day?

9. Tom's mother baked twelve cupcakes. Tom ate three of the cakes. How many cupcakes were left?

$$\begin{array}{r} 12 \\ -3 \\ \hline \end{array}$$

How Much More? How Much Less?

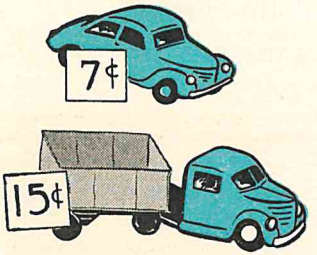


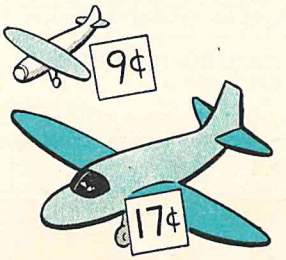
1. At the toy store Helen saw a new game that cost 17 cents and one that cost 9 cents. How much less did one game cost than the other?

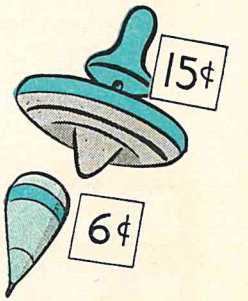
$$\begin{array}{r} 17 \\ -9 \\ \hline \end{array}$$

We subtract to find how much more, and we subtract to find how much less.

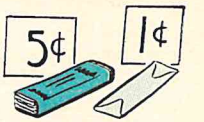
2. Tell which costs less and how much less:





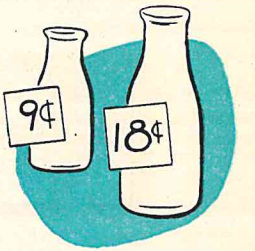


3. Last week Jerry put 18 cents in his bank. This week he put in 9 cents. How much less did he save this week than last week?



4. Jack wants to buy a present for his sister. He saw a jumping rope that costs 16 cents and a puzzle that costs 9 cents. How much less does the puzzle cost than the rope?

5. Helen spent 17 cents, and Jane spent 8 cents. How much less did Jane spend than Helen? How much more did Helen spend than Jane?

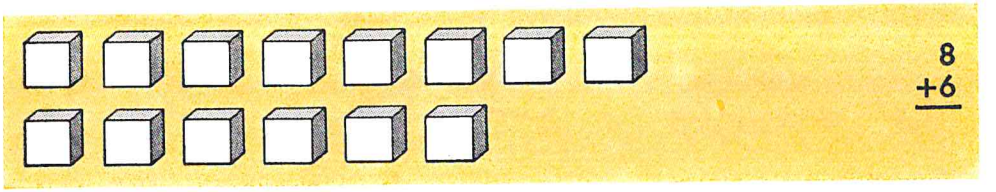


6. Yesterday a bag of marbles cost 14 cents. Jack bought a bag of marbles today for 8 cents. How much more would Jack have paid for the marbles if he had bought them yesterday?

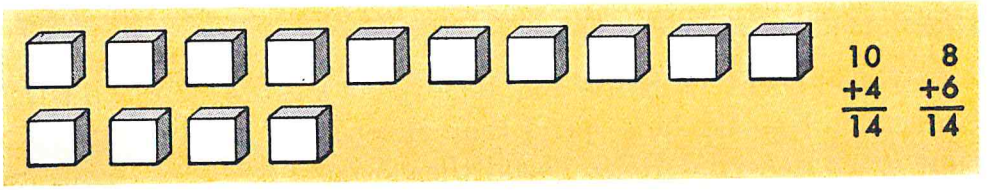
Chapter 8
We Practice

Finding the Answer

Joe did not know the answer to $\begin{array}{r} 8 \\ +6 \\ \hline \end{array}$.
He did not guess. He used blocks to find the answer.
He put 8 blocks in one row and 6 blocks in another row.



Joe said, "I know that eight and six will be ten and some more. So I want to get ten of the blocks in one row. Eight and two are ten. So I can take two blocks from the six and put them with the eight."

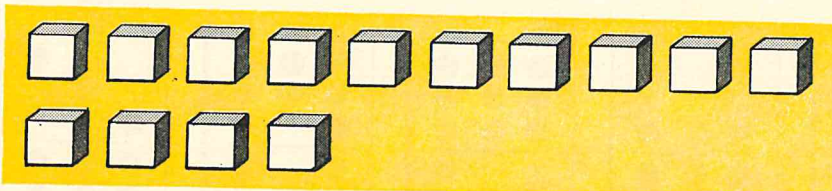


"Now I have ten blocks in one row.
There are four blocks left in the other row.
Ten and four are fourteen.
So eight and six are fourteen."

Finding the Answer

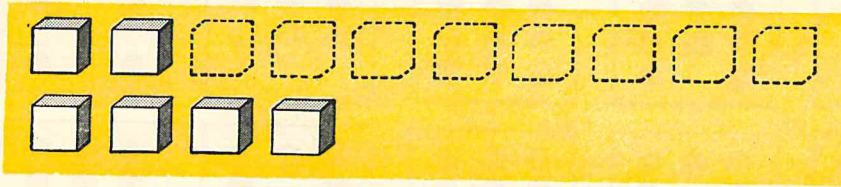
Ann tells how she finds the answer when she takes eight from fourteen.

She says, "Fourteen is ten and four. So I put ten blocks in one row and four blocks in another row."



$$\begin{array}{r} 14 \\ -8 \\ \hline \end{array}$$

"I want to take eight blocks away. I cannot take eight from four, but I can take eight from ten. There are two blocks left in that row, and I have four blocks in the other row. Two and four are six. So eight from fourteen is six."



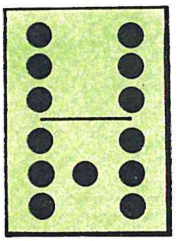
$$\begin{array}{r} 14 \\ -8 \\ \hline 6 \end{array}$$

Look at the blocks again.

Think: Fourteen is ten and four.
Eight from ten is two.
Two and four are six.
So eight from fourteen is six.

$$\begin{array}{r} 10 \text{ and } 4 \\ -8 \\ \hline 2 \text{ and } 4 \end{array}$$

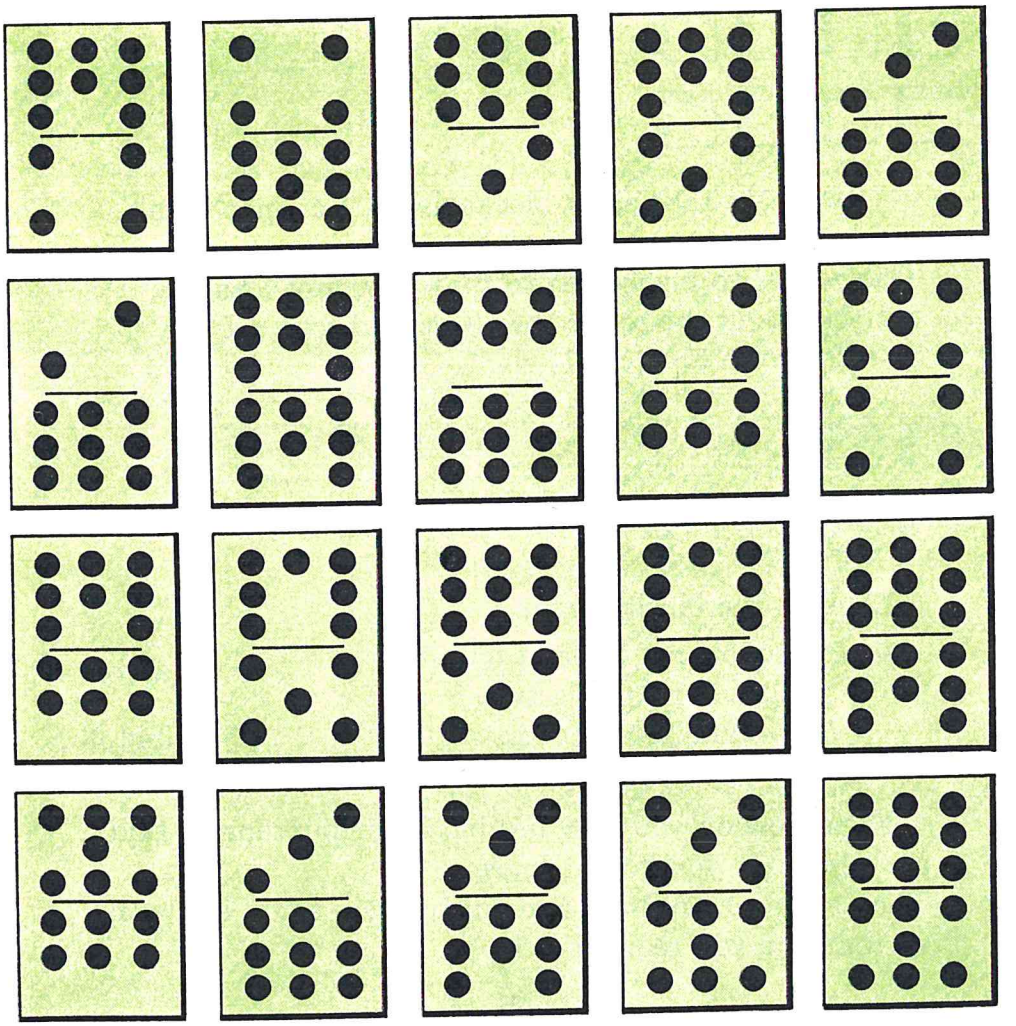
From now on you may use blocks or buttons to find answers that you do not know.
Then say each addition and subtraction again and again so that you will remember it.

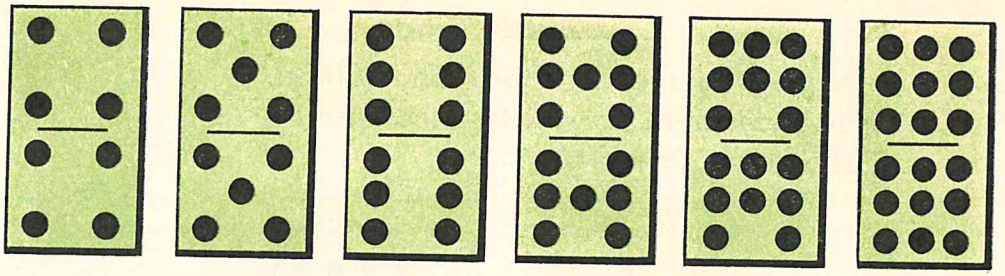


Additions with Dominos

Look at the domino at the left.
See six dots above and seven below.
Think and say, "Six and seven are thirteen.
Seven and six are thirteen."

Say the two additions for each domino below:





Doubles

These dominos are called **doubles**. Why?

Why are these additions called doubles?

4	5	6	7	8	9	3	2	1
4	5	6	7	8	9	3	2	1
8	10	12	14	16	18	6	4	2

We can use the doubles to find answers for other addition questions.

Five and four are how many?
We know that four and four are eight.
Five is one more than four.
Five and four are one more than four and four.
So five and four are nine.

5	4
4	4
	8

Six and seven are how many?
Seven and seven are fourteen.
Six and seven are one less than seven and seven.
Thirteen is one less than fourteen.
So six and seven are thirteen.

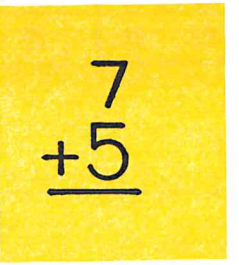
6	7
7	7
	14

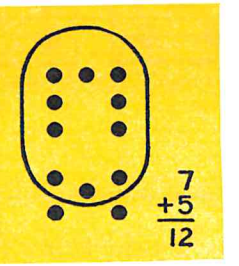
Use doubles to think the answer to each question:

7	8	8	9	7	6	6	5
6	7	9	8	8	5	7	6

Number Cards

Make a number card for each addition that seems hard for you to remember. This is a number card:

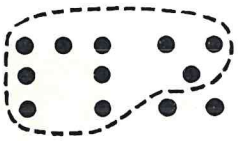




First, write the addition question on the front of the card. Then make a dot picture of the numbers on the back of the card. Count the top group of dots and enough more in the bottom group to make ten. Draw a ring around these ten dots.

Look at the front of the card. Now say the answer if you can. Say, "Seven and five are twelve." Then put the card in your "I-Know" pile.

If you do not know the answer, do not guess. Look at the back of the card and think the answer.



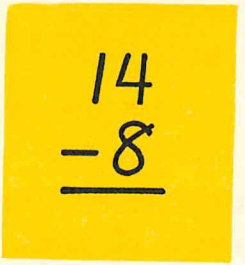
Think: Seven and three are ten.
Three from five is two.
Ten and two are twelve.
So seven and five are twelve.

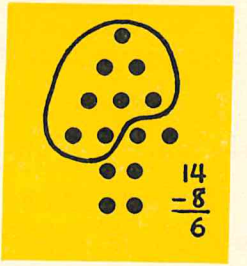
Look at the front of the card again and say over and over, "Seven and five are twelve."

Put this card in the "I-Do-Not-Know" pile. Study the cards in this pile again and again.

Number Cards

Make a number card for each subtraction that seems hard for you to remember. This is a number card:

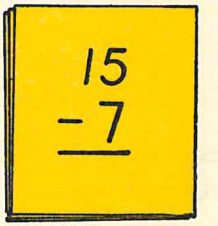




First, write the subtraction question on the front of the card. On the back of the card make a picture of the top number—ten and so many more. Draw a ring around as many of the ten dots as the subtraction question asks you to take away.

Look at the front of the card. If you know the answer, say it. Say, "Eight from fourteen is six."

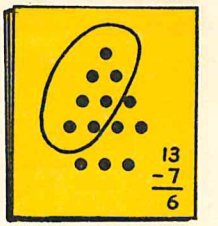
I KNOW



Put that card in your "I-Know" pile.

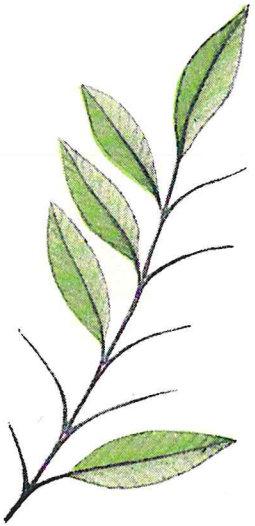
If you do not know the answer, do not guess. Look at the back of the card and find the answer. Count eight away from ten. Then count all the dots that are left.

I DO NOT KNOW



Look at the front of the card again. Think and say, "Eight from fourteen is six.
Eight from fourteen is six."

Put this card in your "I-Do-Not-Know" pile. Study the cards in this pile again and again.



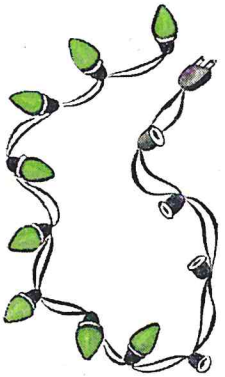
Problems

1. Helen had 12 roses before she gave 9 of them away. How many roses did Helen have then?

2. Jack went fishing. By noon he had 7 fish. He caught 8 more in the afternoon. How many fish did he catch that day?

3. Bill wants to buy an airplane that costs 15¢. He has 8¢. How much more does he need?

4. Jane has 11 animal pictures for her number scrapbook. Sue has 9 animal pictures. How many fewer pictures has Sue than Jane?

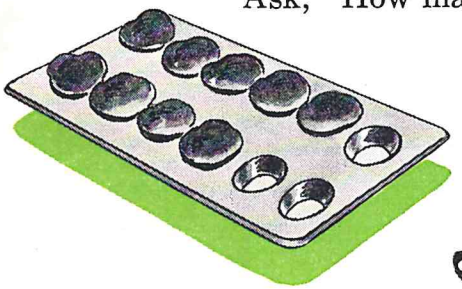


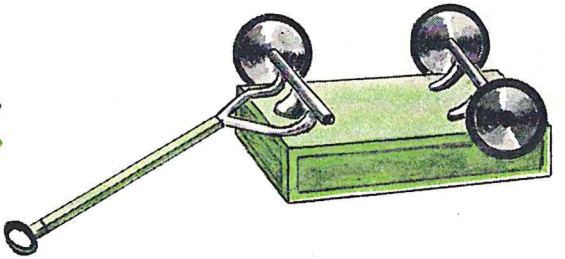
5. Joe may have a truck that costs 16 cents or a car that costs 7 cents.
How much more does the truck cost than the car?
How much less does the car cost than the truck?

6. Mary bought a card that cost 5 cents. Then she bought another card that cost 7 cents. How much should she pay for them?

7. Jim had 13 pennies. He spent 9 of them. Then how many pennies did he have?

8. Make up problems for the pictures. Ask, "How many are gone?"





Do You Know? [Self-test]

Here are the eighty-one additions.
Cover the answers. See how fast you can say them.

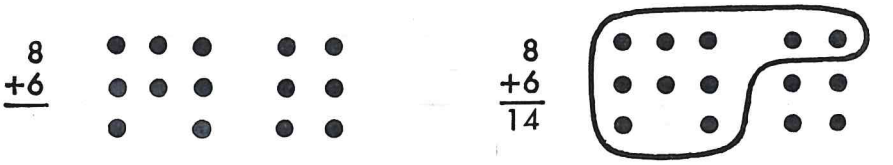
5 5 10	2 2 4	3 3 6	1 2 3	3 1 4	1 1 2	6 1 7	7 1 8	1 6 7
8 8 16	2 9 11	1 4 5	1 3 4	8 2 10	4 5 9	9 9 18	4 4 8	7 7 14
2 3 5	5 1 6	8 1 9	6 6 12	1 7 8	9 2 11	9 1 10	4 1 5	4 2 6
1 9 10	5 2 7	2 7 9	1 8 9	2 8 10	3 4 7	5 4 9	2 4 6	2 1 3
9 3 12	2 6 8	4 6 10	3 8 11	6 3 9	1 5 6	3 2 5	4 3 7	8 3 11
3 9 12	5 3 8	2 5 7	3 5 8	7 2 9	4 7 11	8 4 12	3 7 10	5 6 11
3 6 9	4 8 12	7 3 10	6 2 8	6 5 11	7 4 11	6 7 13	9 4 13	6 4 10
5 9 14	4 9 13	5 7 12	7 5 12	8 9 17	7 6 13	9 5 14	6 9 15	9 8 17
8 7 15	8 5 13	9 6 15	6 8 14	5 8 13	8 6 14	7 8 15	7 9 16	9 7 16

Thinking the Answer

Say the answers to these addition questions.
Do not guess. Copy the ones that you do not know.
You will learn how to think the answer.

1.	9 4	8 3	7 5	6 7	4 8	9 3	6 8	8 5	6 6
2.	9 2	7 4	4 9	5 6	5 7	3 9	7 6	6 5	7 7
3.	8 4	5 8	3 8	4 7	8 9	5 9	2 9	9 5	8 8
4.	8 6	6 9	9 7	9 8	8 7	9 6	7 9	7 8	9 9

Betty showed with dots how to think the answer.



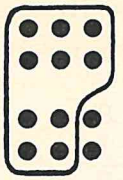
She made 8 dots and 6 dots to show the numbers. Then she made a ring around the 8 dots and enough more dots to make ten. It took two more dots.

Betty said, "Eight and two are ten.
I took two from six; so four are left. Ten and four are fourteen. So eight and six are fourteen."

Thinking the Answer

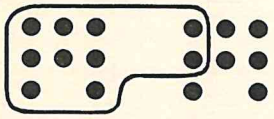
Think:

Six and four are ten.
Four from six is two.
Ten and two are twelve.
So six and six are twelve.

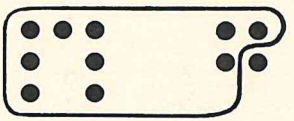


$$\begin{array}{r} 6 \\ 6 \\ \hline 12 \end{array}$$

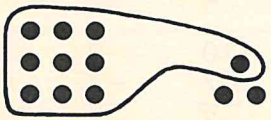
Think and write the answers to these questions:



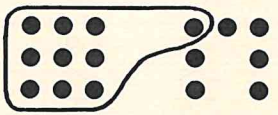
$$\begin{array}{r} 8 \\ 8 \\ \hline \end{array}$$



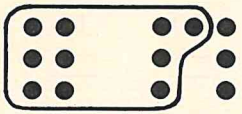
$$\begin{array}{r} 7 \\ 4 \\ \hline \end{array}$$



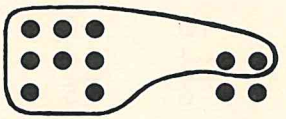
$$\begin{array}{r} 9 \\ 3 \\ \hline \end{array}$$



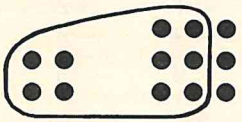
$$\begin{array}{r} 9 \\ 7 \\ \hline \end{array}$$



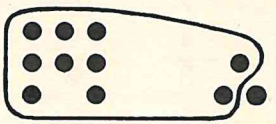
$$\begin{array}{r} 6 \\ 7 \\ \hline \end{array}$$



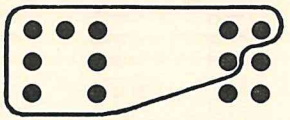
$$\begin{array}{r} 8 \\ 4 \\ \hline \end{array}$$



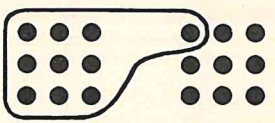
$$\begin{array}{r} 4 \\ 9 \\ \hline \end{array}$$



$$\begin{array}{r} 8 \\ 3 \\ \hline \end{array}$$



$$\begin{array}{r} 7 \\ 6 \\ \hline \end{array}$$



$$\begin{array}{r} 9 \\ 9 \\ \hline \end{array}$$

Use dots to find the answers to the questions on page 98 that you were not sure about. Then say each addition again and again so that you will remember it.

Do You Know? [Self-test]

Here are the eighty-one subtractions.
Cover the answers. See how fast you can say them.

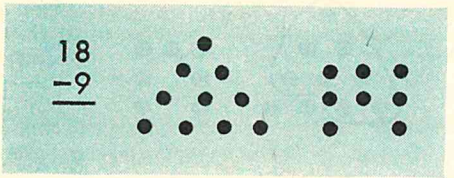
5 − 1 = 4	3 − 2 = 1	8 − 1 = 7	5 − 3 = 2	4 − 2 = 2	9 − 1 = 8	5 − 4 = 1	5 − 2 = 3	6 − 1 = 5
3 − 1 = 2	2 − 1 = 1	7 − 1 = 6	6 − 5 = 1	9 − 8 = 1	4 − 1 = 3	8 − 4 = 4	6 − 3 = 3	4 − 3 = 1
10 − 1 = 9	10 − 2 = 8	6 − 2 = 4	6 − 4 = 2	7 − 2 = 5	10 − 5 = 5	9 − 5 = 4	11 − 2 = 9	12 − 6 = 6
8 − 7 = 1	7 − 3 = 4	7 − 5 = 2	9 − 3 = 6	7 − 6 = 1	8 − 2 = 6	10 − 7 = 3	9 − 7 = 2	8 − 6 = 2
12 − 8 = 4	10 − 6 = 4	10 − 4 = 6	9 − 4 = 5	9 − 6 = 3	8 − 3 = 5	10 − 9 = 1	10 − 3 = 7	11 − 7 = 4
14 − 7 = 7	9 − 2 = 7	7 − 4 = 3	12 − 9 = 3	11 − 5 = 6	10 − 8 = 2	11 − 3 = 8	12 − 7 = 5	11 − 6 = 5
13 − 6 = 7	8 − 5 = 3	12 − 3 = 9	11 − 9 = 2	12 − 4 = 8	16 − 8 = 8	11 − 8 = 3	12 − 5 = 7	18 − 9 = 9
11 − 4 = 7	14 − 8 = 6	15 − 8 = 7	14 − 6 = 8	15 − 6 = 9	13 − 7 = 6	13 − 5 = 8	13 − 8 = 5	13 − 9 = 4
16 − 7 = 9	15 − 7 = 8	15 − 9 = 6	13 − 4 = 9	17 − 9 = 8	14 − 5 = 9	17 − 8 = 9	16 − 9 = 7	14 − 9 = 5

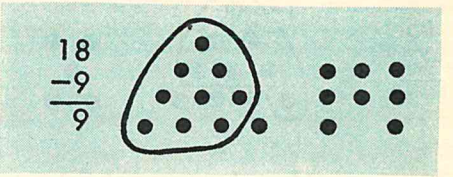
Thinking the Answer

Say the answers to these subtraction questions.
Do not guess. Copy the ones that you do not know.
You will learn how to think their answers.

1.	11	13	12	13	12	11	12	14	15
	−9	−7	−9	−5	−4	−6	−7	−9	−7
2.	11	14	11	13	12	11	12	16	17
	−8	−7	−5	−9	−8	−4	−6	−7	−8
3.	13	11	15	12	13	11	12	16	16
	−8	−7	−9	−3	−4	−3	−5	−8	−9
4.	11	13	14	14	14	15	15	17	18
	−2	−6	−5	−8	−6	−6	−8	−9	−9

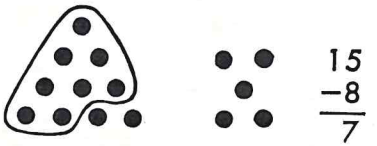
Jim does not know the answer to $\begin{array}{r} 18 \\ -9 \end{array}$.
He uses dots to find the answer.
Jim makes 10 dots and 8 dots to show eighteen.
Then he draws a ring around nine of the ten dots
to show that he is taking away nine dots.





Jim thinks: "Nine from ten is one.
One and eight are nine.
Nine from eighteen is nine."

Thinking the Answer

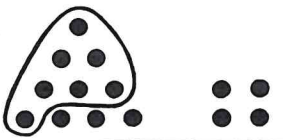
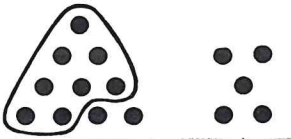
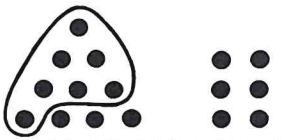
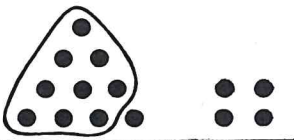
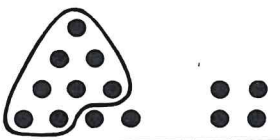
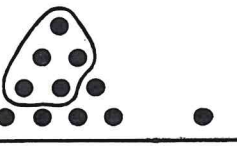
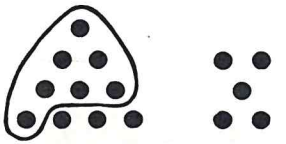
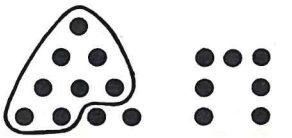


$$\begin{array}{r} 15 \\ -8 \\ \hline 7 \end{array}$$

Think:

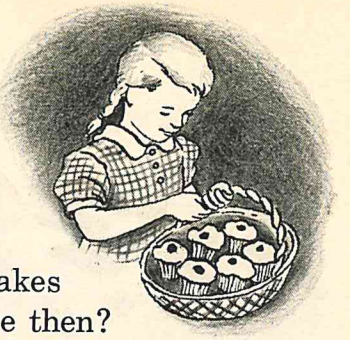
Eight from ten is two.
Two and five are seven.
Eight from fifteen is seven.

Think and write the answers to these questions:

$\begin{array}{r} 11 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -5 \\ \hline \end{array}$
$\begin{array}{r} 14 \\ -7 \\ \hline \end{array}$ 	 $\begin{array}{r} 15 \\ -8 \\ \hline \end{array}$
$\begin{array}{r} 16 \\ -7 \\ \hline \end{array}$ 	 $\begin{array}{r} 14 \\ -9 \\ \hline \end{array}$
$\begin{array}{r} 14 \\ -8 \\ \hline \end{array}$ 	 $\begin{array}{r} 11 \\ -5 \\ \hline \end{array}$
$\begin{array}{r} 15 \\ -7 \\ \hline \end{array}$ 	 $\begin{array}{r} 17 \\ -8 \\ \hline \end{array}$

Use dots to think the answers to the questions on page 101 that you were not sure about. Then say each subtraction over and over so that you will remember it.

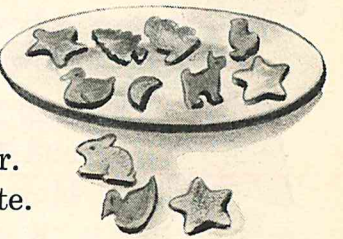
Problems



1. Jane made 14 cupcakes.
She took 6 of them to her grandmother.
How many cupcakes did she leave at home?

2. Jane's grandmother ate 2 of the 6 cupcakes for her supper. How many cakes did she have then?

3. Grandmother gave Jane 9 eggs to take home.
Jane's mother already had 8 eggs.
How many eggs did Jane's mother have in all?



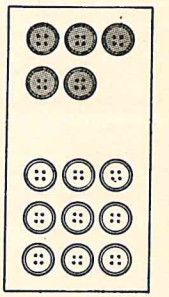
4. Mrs. West had 11 eggs in all.
She used 4 eggs to make a birthday cake.
How many eggs did she have left?

5. Ann put 8 cookies on the plate for supper.
Then she got 3 more and put them on the plate.
How many cookies did Ann get for supper?

6. Bill had 9 marbles. He bought 4 more.
How many marbles did he have then?

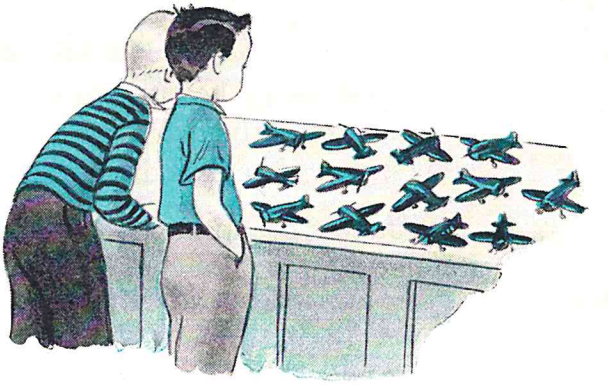
7. Betty had 9 books. Her mother gave her 3 more.
Then how many books did Betty have?

8. Bob has 14 cents, and Joe has 7 cents.
How much more money has Bob than Joe?



9. Sue needs 14 buttons for her new dress.
She has 5 buttons. She must get some more buttons.
How many more buttons should she get?

10. Jim is 9 years old. His sister is 14 years old.
How much younger is Jim than his sister?
How much older is Jim's sister than he?



At the Store

1. Jim had 9 toy cars. He bought 2 more.
How many toy cars had he then?

2. Sue paid 8 cents for a bed for her dollhouse and 7 cents for a chair.
How much did the bed and the chair cost?

3. Jack picked out 12 marbles that he wanted, but he had only enough money to buy 4 of them.
How many marbles should he put back?

4. Jane had 17 cents.
She paid 8 cents for a flower for her hat.
How many cents did she have left?

5. Ann wanted to buy a book that cost 15 cents.
She had 6 cents with her.
How many more cents did she need to buy the book?

6. There were 13 toy airplanes in the store.
The boys bought 5 of them.
How many airplanes were left in the store?

7. Jane got 9 cards at one store and 6 cards at another store. How many cards did she get?

Do You Remember? [Self-test]

Write the answers to these addition questions.
Just copy the question if you do not know the answer.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1.	8 +6	6 +9	8 +8	7 +4	9 +7	8 +3	6 +7	8 +4	4 +9
2.	9 +3	7 +6	9 +9	8 +5	6 +6	6 +8	5 +9	9 +2	6 +5
3.	4 +8	8 +9	7 +5	5 +8	5 +7	8 +7	2 +9	9 +5	5 +6
4.	7 +7	3 +8	9 +6	4 +7	7 +9	7 +8	3 +9	9 +8	9 +4

Write the answers to these subtraction questions.
Just copy the question if you do not know the answer.

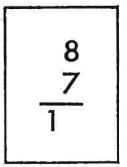
5.	14 −8	15 −6	16 −8	11 −7	16 −9	11 −8	13 −6	12 −8	15 −7
6.	13 −4	12 −9	13 −7	18 −9	13 −8	12 −6	14 −6	14 −5	12 −3
7.	11 −9	11 −6	12 −4	17 −8	12 −7	13 −5	12 −5	15 −8	17 −9
8.	11 −2	14 −9	11 −5	14 −7	11 −3	15 −9	11 −4	16 −7	13 −9

Now find the answers that you did not know.

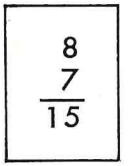
Ten and How Many More?

Try to answer each addition question.
If you cannot say an answer, do not guess.
Think the answer.

1.	2 9	9 5	5 6	7 7	3 8	9 6	8 6	6 9	8 8
2.	4 7	7 9	7 8	4 8	8 9	7 5	7 4	9 7	8 3
3.	5 8	5 7	8 7	3 9	9 8	9 4	5 9	9 2	6 5
4.	6 7	8 4	4 9	9 3	7 6	9 9	8 5	6 6	6 8



Jane does not remember the answer to $\begin{array}{r} 8 \\ +7 \end{array}$.
She thinks the answer without using dots.
She thinks, "Eight and two are ten."
She writes 1 in ten's place in the answer.
Then she thinks, "Two from seven is five."
She writes 5 in one's place.
The answer is 15.



Jane does not want to think the answer every time.
So she says the addition again and again in order
to remember it: "Eight and seven are fifteen."

Practice each addition that you do not know.
Now write all the addition questions and answers.

Subtraction Practice

Try to answer each subtraction question.
If you cannot say an answer, do not guess.
Think the answer.

1.	11	14	11	14	11	13	12	17	13
	−2	−9	−5	−7	−3	−7	−3	−9	−9
2.	15	11	16	15	14	18	13	12	13
	−9	−4	−7	−7	−8	−9	−6	−8	−4
3.	15	16	11	16	11	14	11	13	12
	−6	−8	−7	−9	−8	−5	−9	−8	−9
4.	11	12	17	12	13	12	15	12	14
	−6	−4	−8	−7	−5	−5	−8	−6	−6

When you do not know the answer to a subtraction question, you can think the answer.
You do not need to use dots.

Think: Fourteen is ten and four.
Eight from ten is two.
Two and four are six.
Eight from fourteen is six.

10 and 4
−8
2 and 4

You will not want to stop to think the answer.
So say each subtraction over and over.
Practice each subtraction that you do not know.
Now write the subtraction questions and answers.

14
−8
6

Chapter 9
The Idea of Ten

Counting by Tens

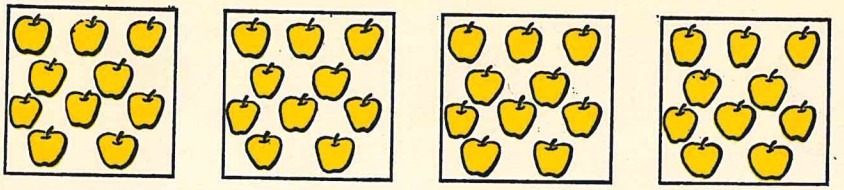
"Look at the blocks on the table.
How many blocks are there in all?" asked Miss Lee.
"Who can count them for us?"

"I can," said Jerry. "There are ten blocks in a row.
So I count them by tens like this: one ten, two tens,
three tens, four tens, five tens, six tens, seven tens,
eight tens, nine tens, ten tens."

"Who can count them another way?" asked Miss Brown.

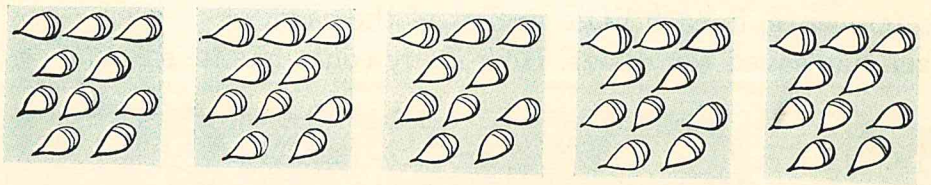
"I can," said Susan. "Ten, twenty, thirty, forty,
fifty, sixty, seventy, eighty, ninety, one hundred."

How Many Tens?

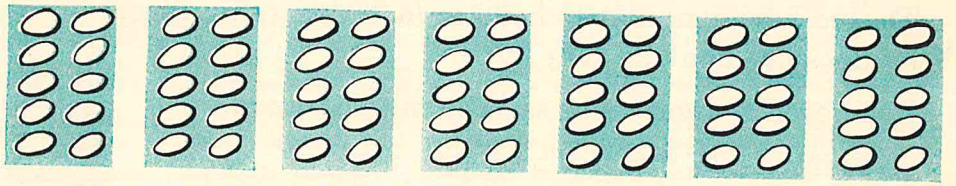


How many apples are there in each box?

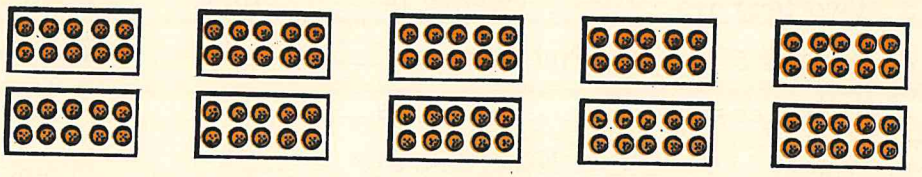
Count the apples by tens: one ten, two tens, and so on. Then count them: ten, twenty, thirty, and so on.



Count the tops by tens both ways.

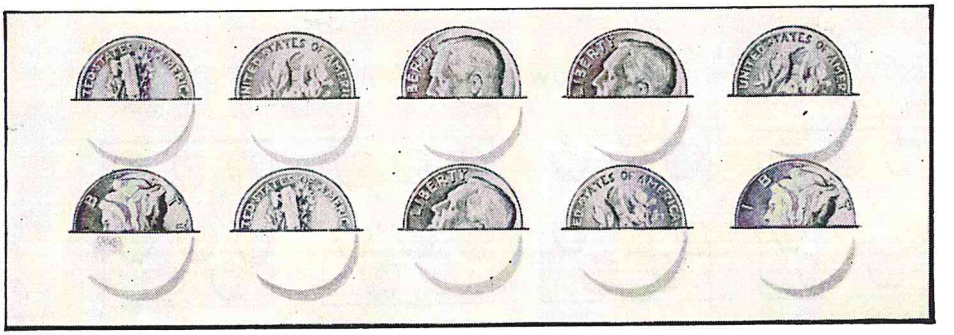


Count the candy Easter eggs by tens.



How many buttons are on each card?

How many buttons are there in all?



A Dime Saver

Jack saves dimes. When he gets a dime, he puts it in a little pocket in his dime saver. He has 1 dime, or ten cents, in each little pocket of the card. Jack has saved ten dimes. How many cents has he saved?

To find how many cents he has, Jack counts by tens. Why does he count by tens?

Read each sentence and say the missing word.

a. Thirty is 3 *tens*. Three tens are *30*.

b. Four tens are _____. Forty is 4 _____.

c. Two tens are _____. Twenty is _____ tens.

d. Fifty is 5 _____. Five tens are _____.

e. Eight tens are _____. Eighty is _____ tens.

f. Ninety is 9 _____. Nine tens are _____.

g. Ten tens are _____. One hundred is 10 _____.

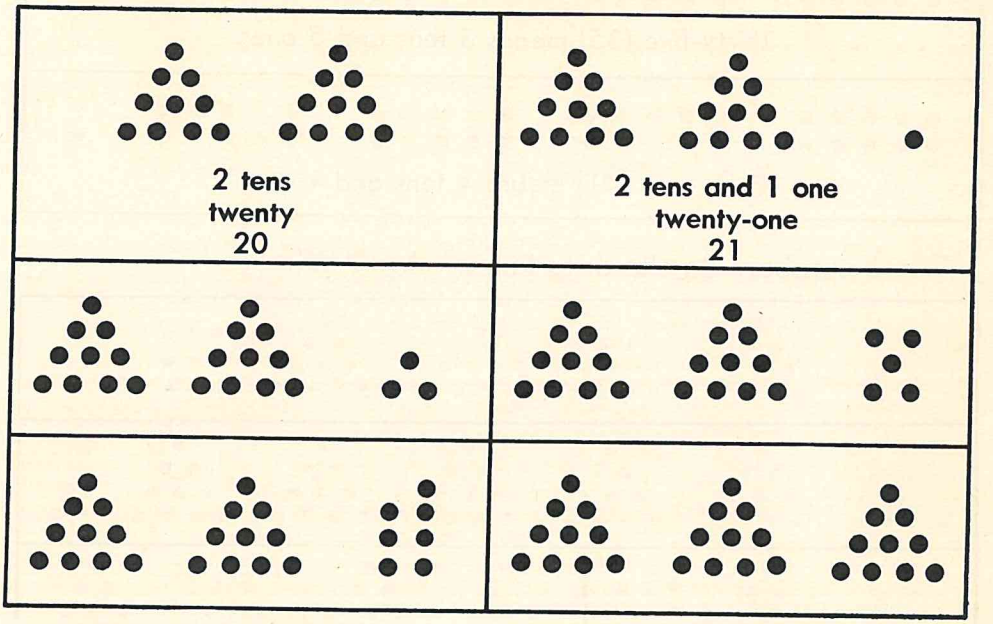
h. Sixty is 6 _____. Six tens are _____.

5 tens

Numbers: Twenty to Thirty

How many tens and how many ones are in each box?

How many dots are there altogether in each box?



Make a dot picture of 20, 22, 24, 25, 27, 28, 29, 30. First, make as many tens as you need for the number. Then make the ones. What does each number mean?

Say the missing numbers. Then read them in order.

20, ____ , ____ , 23, 24, ____ , 26, ____ , ____ , 29, ____ .

What number comes just after each of these numbers?

19, 21, 25, 24, 29, 26, 22, 27, 23, 20, 28.

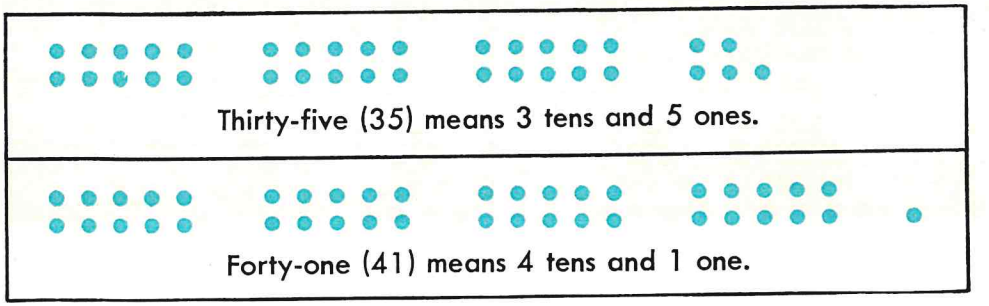
What number comes just before each of these numbers?

25, 21, 30, 20, 28, 23, 26, 24, 27, 22, 29.

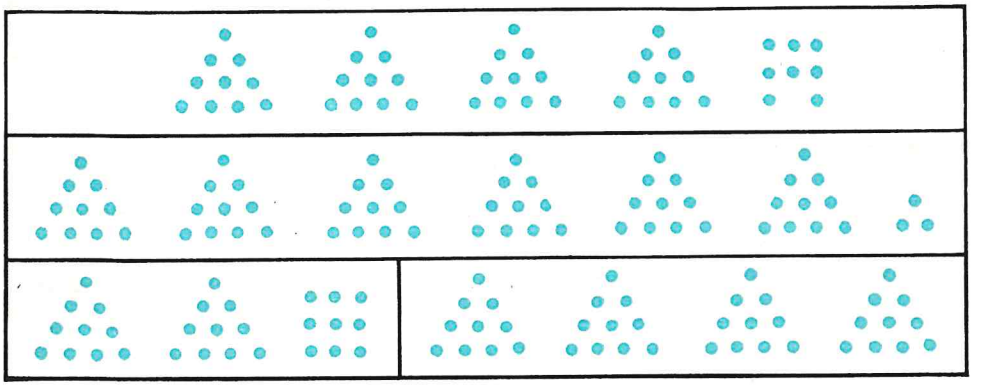
What number comes between these numbers?

20 ____ 22, 26 ____ 28, 24 ____ 26, 28 ____ 30, 22 ____ 24.

What Numbers Mean



What numbers do the dots below show? Why?



Make dot pictures to show these numbers:

sixteen	seventy-two	fifty	eighty-six
forty-five	ninety-four	sixty-seven	one hundred

What are the missing words? Read each sentence.

a. Thirty-two means _____ tens and _____ .

b. Ninety-six means _____ tens and _____ .

c. Eighty means _____ tens.

d. Eleven means _____ ten and _____

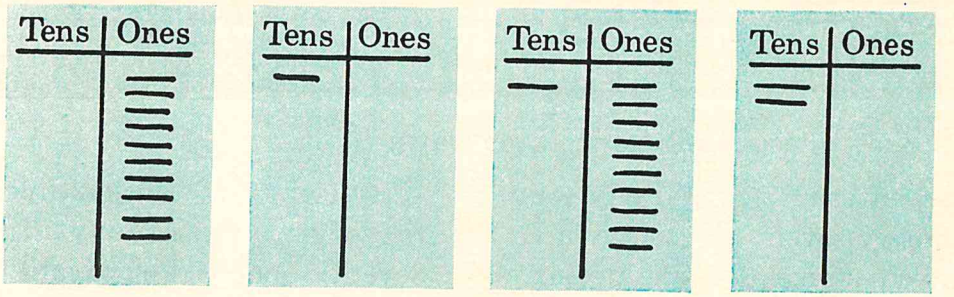
e. Forty-nine means _____ tens and _____ .

Counting Long Ago

The chief is counting his men. As each man walks by, the chief makes a mark in the sand with a stick.

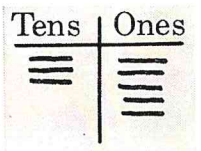
How many marks are in the first row? the second row? the third row? How many marks are there in all? There are 2 tens and 5. We say, "Twenty-five."

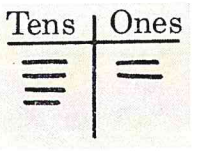
After many years people learned to make marks in columns. When they had counted ten ones, they rubbed out the marks in the column for ones and made one mark in the column for tens. How did they count two tens?

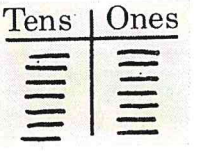


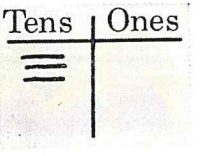
Writing Numbers

How many tens are there? How many ones are there? What is the number?





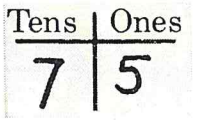




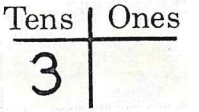
Make marks in columns to show:

forty	twenty-four	sixteen	seventy-two	fifty-one
sixty	thirty-nine	eleven	sixty-six	eighty-five

Later people learned to write numbers with figures. They wrote figures in columns in place of the marks.

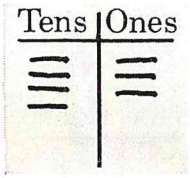


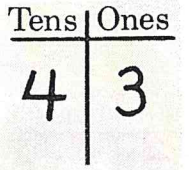
How many tens are there?
How many ones are there?
What is the number?

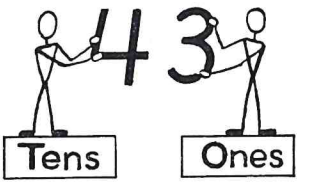


Now we write numbers without columns. We just write the ten's figure in ten's place and the one's figure in one's place.

Here are the three ways people wrote tens and ones:







Show these numbers in three ways:

seventeen	thirty-four	sixty-eight	twenty-five
ninety-seven	forty-three	fifty-five	ninety-nine
twenty-nine	eighty-six	seventy-one	forty-eight

Using Zero to Write Tens

We use 0 (zero) to write tens.
We can write tens without columns because we use 0.
The 0 puts the ten's figure in ten's place.

Tens	Ones
≡	

Tens	Ones
3	

30

Thirty means "3 tens." To show 3 tens, we write 3 in ten's place and 0 in one's place. The 0 in 30 means there are no ones. It takes the place of the empty column, and it puts the 3 in ten's place.

Write these numbers without columns:

Tens	Ones
8	

Tens	Ones
5	

Tens	Ones
9	

Tens	Ones
4	

Now write these numbers with figures:

seventy	twenty	fifty	ninety
thirty	ten	sixty	forty

In each number tell what keeps the ten's figure in ten's place: 40, 80, 60, 27, 31, 99, 38, 22.

When a number has tens but no ones, we write 0 in one's place to show there are no ones and to put the ten's figure in ten's place.

Tens	Ones
6	8

In a two-place number, the left-hand figure tells how many tens there are, and the right-hand figure tells how many ones there are.

	10	20	30	40	50	60	70	80	90	100
1	11	21	31	41	51	61	71	81	91	
2	12	22	32	42	52	62	72	82	92	
3	13	23	33	43	53	63	73	83	93	
4	14	24	34	44	54	64	74	84	94	
5	15	25	35	45	55	65	75	85	95	
6	16	26	36	46	56	66	76	86	96	
7	17	27	37	47	57	67	77	87	97	
8	18	28	38	48	58	68	78	88	98	
9	19	29	39	49	59	69	79	89	99	

Reading and Writing Numbers

1. Look at 24. We read it: *Twenty-four.*

2. Read the numbers in the top row of the chart.

3. Find 5 on the chart. Read all the numbers in that row.

4. Can you count to one hundred? Try it.

5. Find 80. Read each number under it.

6. We write **twenty-four** with figures like this: 24.

7. Use figures to write the numbers below:

fifty-six	twenty-eight	eighty-two	twelve
sixty-five	forty-three	seventy-six	sixty
ninety-nine	thirty-four	nineteen	ninety

8. Find these pages in your book:

75 34 99 10 8 29 52 63 47 81 16

JANUARY

S	M	T	W	T	F	S
..	..	..	..	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
..	..	..	..	..	..	..

FEBRUARY

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	..	..	..	..	..	..
..	..	..	..	..	..	..

MARCH

S	M	T	W	T	F	S
..	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	..	..	..
..	..	..	..	..	..	..

APRIL

S	M	T	W	T	F	S
..	..	..	..	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	..
..	..	..	..	..	..	..

MAY

S	M	T	W	T	F	S
..	..	..	..	..	..	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	..	..	..	..	..

JUNE

S	M	T	W	T	F	S
..	..	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	..	..	..
..	..	..	..	..	..	..

JULY

S	M	T	W	T	F	S
..	..	..	..	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
..	..	..	..	..	..	..

AUGUST

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	..	..	..	..
..	..	..	..	..	..	..

SEPTEMBER

S	M	T	W	T	F	S
..	..	..	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	..	..
..	..	..	..	..	..	..

OCTOBER

S	M	T	W	T	F	S
..	..	..	..	..	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	..	..	..	..	..	..

NOVEMBER

S	M	T	W	T	F	S
..	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	..	..	..	..
..	..	..	..	..	..	..

DECEMBER

S	M	T	W	T	F	S
..	..	..	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	..
..	..	..	..	..	..	..

The Calendar

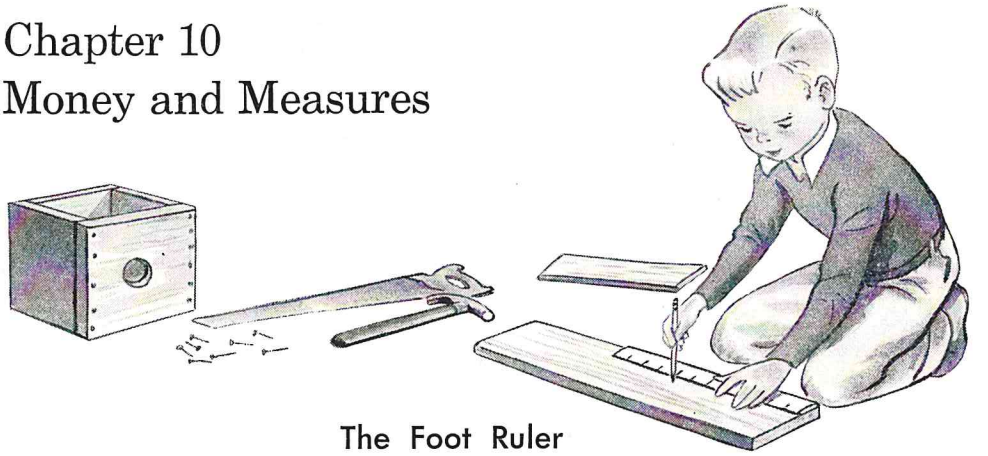
The calendar on Miss Brown's desk shows all the months in the year.

1. How many months are there in a year?
2. Name the months that have 30 days.
3. Name the months that have 31 days.
4. What month has fewer than 30 days?
5. Name the days of the week.

Look at the calendar in your room to answer these questions:

6. On what day of the week does this month begin?
7. How many days are in this month?

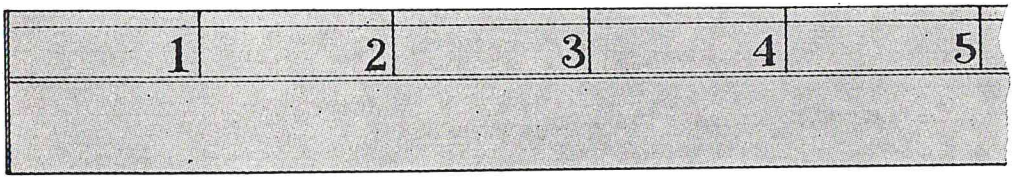
Chapter 10
Money and Measures



The Foot Ruler

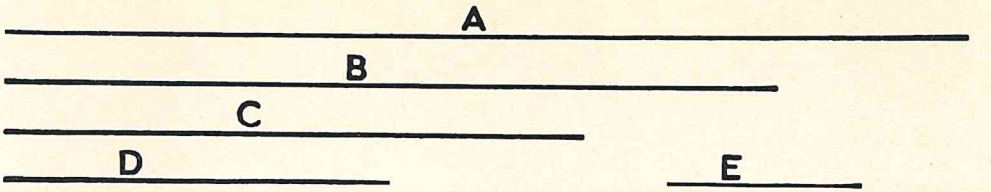
Fred is making a birdhouse.
He needs a board that is 8 inches long.
He is measuring the board with a **foot ruler.**

This is part of a ruler. It shows 5 inches.
It is **one inch** from the left end of the ruler
to the figure 1. From the left end of the ruler
to the figure 2 is **two inches**. Find the mark
that shows 3 inches; 5 inches; 4 inches.



Look at a real ruler.
What number is at the right end of the ruler?
How many inches long is the ruler?

There are 12 inches in one foot.
A ruler that is 1 foot long is a **foot ruler.**



Using the Foot Ruler

Line E is 1 inch long. It is **shorter** than line D.

How long is line D? Measure it with your ruler.

Line A is **longer** than line D.

How long is line A?

Is line C longer or shorter than line D?

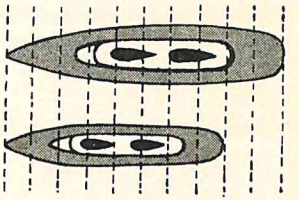
How much longer or shorter is line C than line D?

How long is line B? Is it longer than line C?

1. Jack said, "This paper is eleven inches long and eight inches wide."
How much longer is the paper than it is wide?

2. Mary's new pencil is 7 inches long, and her old pencil is only 4 inches long.
How much longer is her new pencil than her old one?

3. Jack's boat is 10 inches long.
Tom's boat is just 8 inches long.
Whose boat is longer? How much longer?



4. Ann's doll is 9 inches tall.
Jane's doll is 15 inches tall.
Which doll is taller? How much taller?

5. How much longer is 15 inches than 8 inches?

6. How much shorter is 7 inches than 15 inches?

penny
1 cent

dime
10 cents

half dollar
50 cents

nickel
5 cents

quarter
25 cents

Money

dollar
100 cents

These are the **coins** we use as our money. The value of each coin is given with its picture.

1. A **nickel** means how many cents?
2. A **dime** means how many cents?
3. A **quarter** means how many cents?
4. A **half dollar** means how many cents?
5. A **dollar** means how many cents?

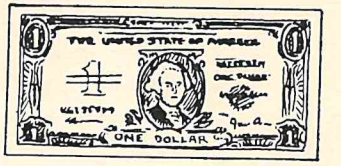
Nickel	*Dime*	*Quarter*	*Half Dollar*	*Dollar*
5 cents	10 cents 2 nickels	25 cents 5 nickels	50 cents 10 nickels 5 dimes 2 quarters	100 cents 20 nickels 10 dimes 4 quarters 2 half dollars

6. How many nickels have the same value as a dime? a quarter? a half dollar? a dollar?

7. How many dimes have the same value as a dollar? a half dollar?

The dollar coin is so heavy that we use the dollar bill in place of it. They have the same value.

8. A dollar means how many cents?
A dollar means how many nickels?
A dollar means how many dimes?
A dollar means how many quarters?
A dollar means how many half dollars?



9. What coin has the same value as 5 pennies?

10. What coin has the same value as 5 nickels?

11. What coin has the same value as 10 nickels?

12. What coin has the same value as 2 quarters?

13. What coin has the same value as 20 nickels?

14. What coin has the same value as 4 quarters?

This is the sign for cents: ¢.
It is often used in place of the word **cent**.
The sign ¢ is always written after the number.

8¢

This is the sign for dollars: $.
It is always written in front of the number.
25 cents may be written: 25¢.
5 dollars may be written: $5.

$8

15. Read these money numbers:

75¢ $2 5¢ 83¢ $15 $60 $10 10¢ 2¢ 41¢

16. Write these money numbers. Use the cent sign (¢) for cents and the dollar sign ($) for dollars.

ninety-two cents	ninety cents	four dollars
forty dollars	forty cents	sixty-five dollars

Counting Money

Say: 5 10 15 20 25 cents

Say: 10 15 20 25 30 35 cents

Count the money in each box.
Start with the value of the coin on the left.

Counting Change

Jerry bought a tablet that cost 8 cents.
He gave the clerk a quarter when he paid for it.

The clerk said, "Here is your change.
The tablet is eight cents."

He gave Jerry 2 pennies and said, "Nine, ten."
Then he gave Jerry a nickel and said, "Fifteen."
Then he gave Jerry a dime and said, "Twenty-five."

1. Jim bought a puzzle for 12 cents.
He gave the clerk a quarter.
Here is Jim's change. Count it.
Begin with 12. Then count: "13, 14, 15, 25 cents."

2. Jack spent 5 cents for ice cream.
He gave the clerk a quarter.
Here is Jack's change.
Count it. Begin with 5.
Did he get the right change?

3. Jane bought a pencil for 4 cents.
She gave the clerk a quarter.
The clerk gave her 1 penny, 2 nickels,
and 1 dime in change.
Did Jane get the right change?

4. Joe bought a bag of marbles for 11 cents.
He gave the clerk a quarter.
Count his change.
Did he get the right change?

Counting Change

1. Bill bought a ruler for 12 cents.
He gave the clerk a half dollar.
Here is Bill's change. Count it.
Did he get the right change?

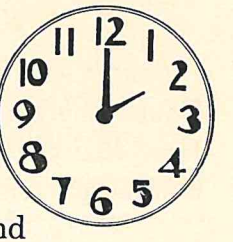
2. Jane bought an eraser for 8¢.
She gave the clerk a half dollar.
Count her change one coin at a time.
Did she get the right change?

3. Joe bought a box of crayons for 15¢.
He gave the clerk a half dollar.
Did he get the right change?

4. Betty bought a ruler and a box of crayons.
Together they cost 27¢.
She gave the clerk a dollar.
Count her change. Is it right?

5. What coins might you get for change if your bill was 7¢ and you gave the clerk a dime?
if your bill was 14¢ and you paid with a quarter?

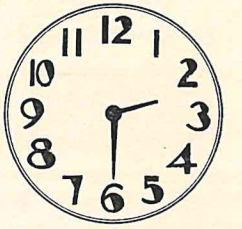
Telling Time



It is 2 o'clock by this clock.
To what number does the short hand point?
To what number does the long hand point?

When the long hand points to 12, the short hand points to the hour.

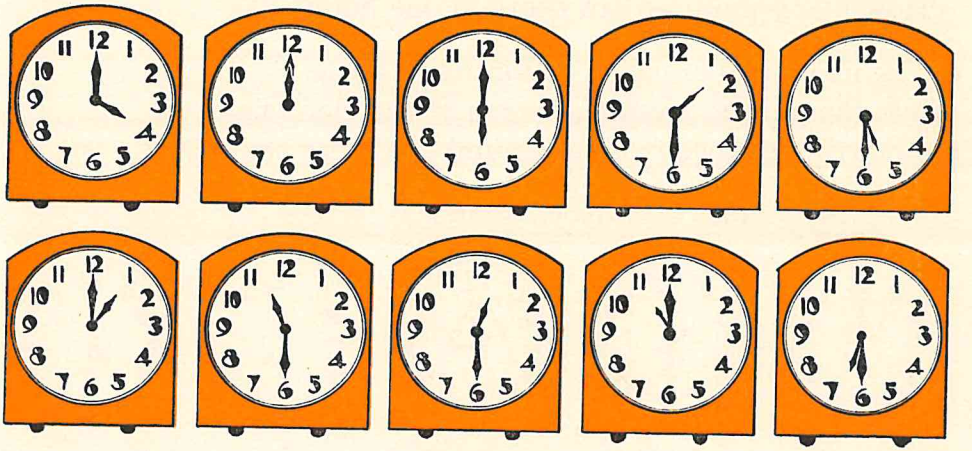
The short hand is called the **hour** hand because it shows the hour.



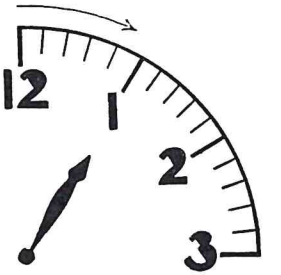
To what number does the long hand point?
The short hand is **past** two.
The time is **half past two.**

When the long hand points to 6, the time is **half past** the hour. The **hour** is the number the short hand has just passed.

What times does each clock show?



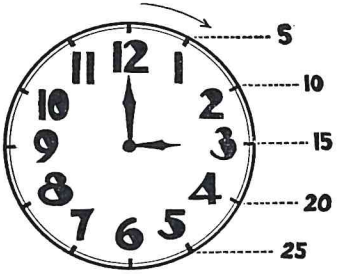
Time



Count the little spaces between 12 and 1.
Count the spaces between 1 and 2.
How many little spaces are there
between 2 and 3?

Each little mark means one **minute**.
It takes the long hand 1 minute to go from one mark to the next. So it takes the long hand 5 minutes to go from 12 to 1.

How many minutes does it take the long hand to go from 12 to 2? from 12 to 3?



Start at 12 and count to find how many minutes it takes the long hand to go around the clock and back to 12. You should count by 5's. Why?

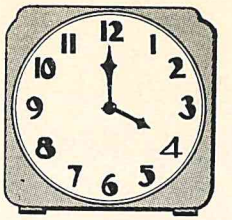
It takes an **hour** for the long hand to go around the clock.

How many minutes are there in one hour?

The long hand is called the **minute** hand.
While the minute hand goes around the clock face, the hour hand goes from one number to the next.

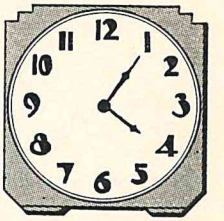
What time does each clock show?

Time by Minutes



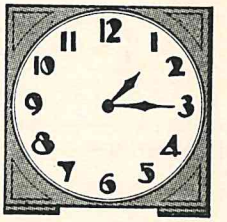
To what number does the minute hand point at 4 o'clock?

Look at the next clock. How many minutes has the minute hand moved since 4 o'clock?



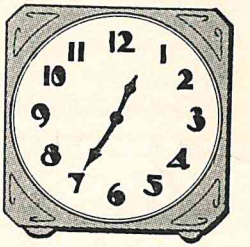
The time is **5 minutes after 4.**

Look at the next clock.
What number did the hour hand just pass?
To what number did the minute hand point at 1 o'clock? Where does it point now?
How many minutes has the minute hand moved since 1 o'clock?
What time does the clock show?



What time does each clock above show?

What time does this clock show? ⟶



Count the minutes that the minute hand will move going from 12 to 7 and from 7 to 12.

When the minute hand is past 6, we can say the time two ways. The clock shows 35 minutes after 12, or 25 minutes to 1.

What time is it by each clock? Say the time two ways.

Chapter 11
Adding Tens

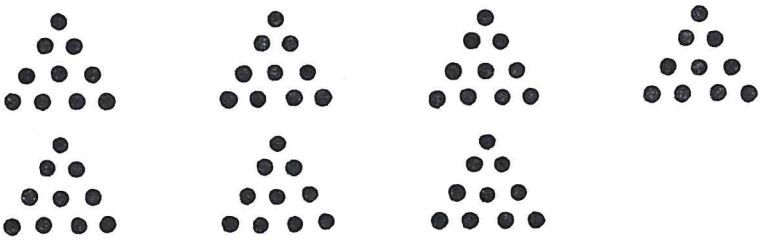
Adding Tens

Jane held up two bundles of sticks. She had put 10 sticks in each bundle.

"Here are two tens," said Jane.

Then she held up three bundles and said, "Here are three tens. Two tens and three tens are five tens."

Jim made dot pictures to show how to add tens.



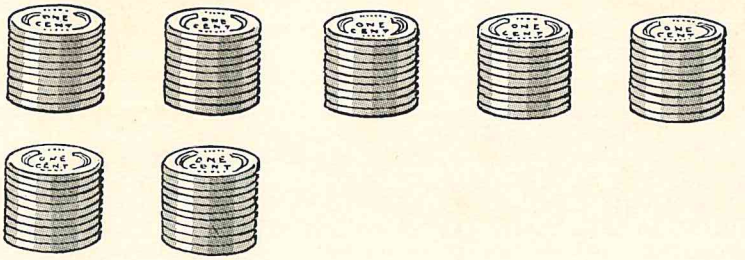
4 tens
3 tens
7 tens

We add tens the way we add ones.

Use bundles of sticks to show how you add tens:

3 tens	5 tens	2 tens	6 tens	5 tens	2 tens
4 tens	4 tens	6 tens	3 tens	1 ten	7 tens

1. Jane has 50 pennies, and Jack has 20 pennies.
How many pennies do they have together?



5 tens
2 tens
7 tens

We know that 5 tens and 2 tens are 7 tens, or seventy.
So we know that 50 and 20 are 70.

We write it like this:
The zeros tell us that there are no ones.
We write zero in one's place in the answer.
Then we add the tens: 5 and 2 are 7.
We write 7 in ten's place.
Jane and Jack together have 70 pennies.

50
20
70

2. Jack and Jane went to the play. Jack's ticket cost 20 cents. Jane's ticket cost 20 cents.
How many cents do they need for the tickets?

20¢
20¢

3. There are 30 children in the second grade and 20 in the third grade.
How many children are there in both grades?

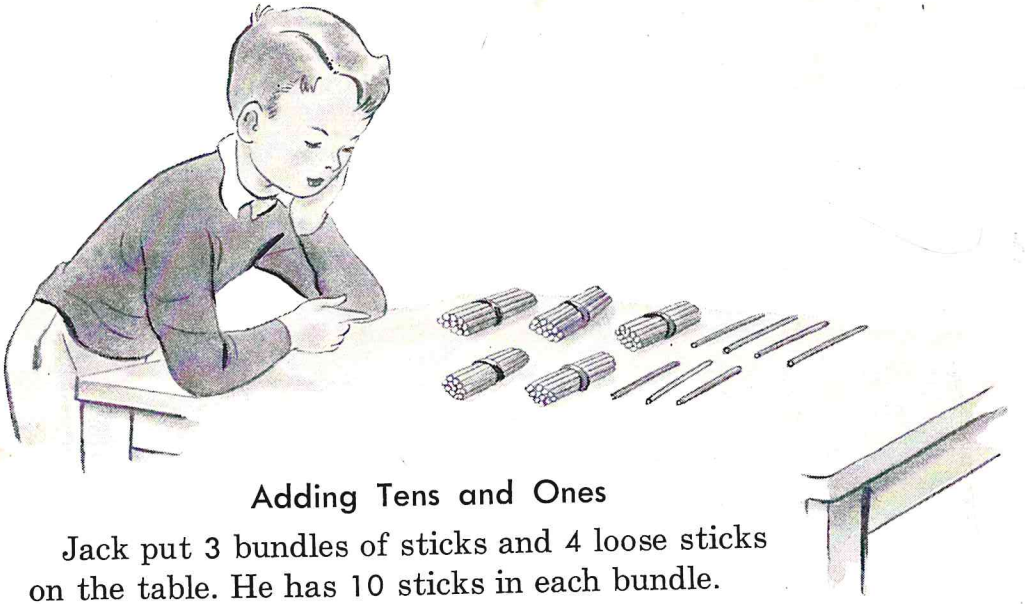
30
20

4. Jim needs 10 cents for a bus ticket and 30 cents for a show ticket. How much does he need?

10¢
30¢

5. Jerry had a new ball that cost 50 cents.
He gave the ball and a dime (10¢) to Jack for a rabbit.
How much did the rabbit cost Jerry?

50¢
10¢



Adding Tens and Ones

Jack put 3 bundles of sticks and 4 loose sticks on the table. He has 10 sticks in each bundle.

"These sticks show 3 tens and 4 ones," he said.

Then he put 2 bundles of sticks and 3 loose sticks on the table and said, "These sticks show 2 tens and 3 ones."

Jack put the sticks together. First, he put the loose sticks together. He had 7 loose sticks. Then he put the bundles together. He had 5 bundles.

"I have 5 bundles and 7 loose sticks; so I have 5 tens and 7 ones. I have fifty-seven sticks," said Jack.

Jack added → 3 tens and 4 ones
and → 2 tens and 3 ones
Then he had → 5 tens and 7 ones

$$\begin{array}{r} 34 \\ 23 \\ \hline 57 \end{array}$$

Use sticks to add these numbers:

26	44	51	63	75	36	18	82	55	47
12	35	38	23	24	42	31	15	44	21

1. Miss Brown asked Ann to get a new pencil for each child. There are 15 boys and 23 girls in the room. How many pencils should Ann get?

What should we do to answer the question?
First, we add the ones.
We think, "Five and three are eight."
We write 8 in one's place.
Then we add the tens.
We think, "One and two are three."
We write 3 in ten's place.
The answer is 3 tens and 8 ones, or 38.
Ann should get 38 pencils.

$$\begin{array}{r} 15 \\ 23 \\ \hline 8 \end{array} \qquad \begin{array}{r} 15 \\ 23 \\ \hline 38 \end{array}$$

2. A toy train costs 54 cents, and a toy airplane costs 34 cents. How much should Jim pay for both?

3. Jack had 44 marbles. He bought 23 more. How many marbles had Jack then?

Write on paper and add:

	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)	(*i*)
4.	42 12	31 53	56 21	13 76	17 61	53 26	24 72	16 12	21 44
5.	18 21	52 42	13 53	34 52	13 31	37 42	12 75	12 41	72 16
6.	31 28	44 43	25 31	65 23	13 82	56 12	54 34	46 33	64 35
7.	43 53	12 77	42 36	64 22	53 21	32 35	57 42	28 71	25 11

Is Your Answer Right?

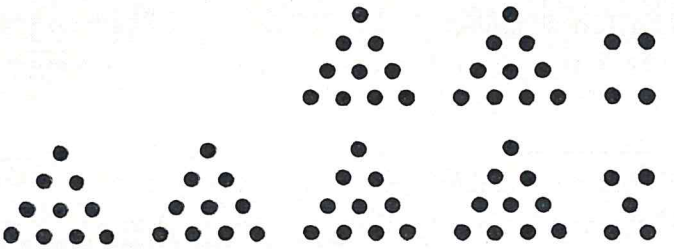
24
45
69

1. Jack counted 24 cars going toward town. Bill counted 45 cars going away from town.

"How many cars did we count?" asked Bill.

Jack added the numbers. He got 69. Then he asked, "Is sixty-nine right?"

"We can use dots to find out," said Bill.

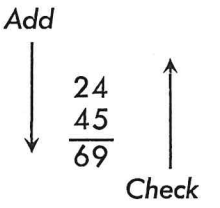


24
45

6 tens and 9 ones, or 69

"It must be right," said Jack.

"You can **check** your work to see if the answer is right," said Miss Brown. "You add the numbers again. This time begin at the bottom and add **up**."



"We got the same number when we added up as when we added down. Our answer must be right," said Bill.

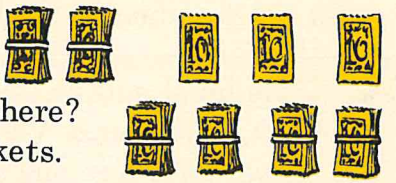
2. Add and check each answer:

(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)	(*i*)	(*j*)
64	13	41	25	21	64	35	73	12	68
31	83	56	21	51	14	24	26	73	21

Adding Tens and Ones

1. Alice sold 23 tickets for the school play, and Jane sold 40. How many tickets did they both sell?

Look at the tickets.
How many loose tickets are there?
How many bundles of ten tickets are there?
There are 6 tens and 3 ones, or 63 tickets.



We can add the numbers to find the answer.
First, look at the ones.
We have 3 **ones and no more.**
So we write 3 in one's place.
Then we add the tens. Two and four are six.
Alice and Jane sold 63 tickets.

$$\begin{array}{r} 23 \\ 40 \\ \hline 63 \end{array}$$

2. Fred had 14 marbles. He bought 10 more. How many marbles did he have in all?

3. On Saturdays Joe cuts grass to earn money. One day Mr. Bell paid him 35 cents, and Mr. West paid him 40 cents. How much did Joe earn that day?

4. Joe earned 75 cents one day, and his aunt gave him 20 cents. How many cents did he get in all?

5. Jane paid 49 cents for a cake and 50 cents for ice cream for her mother. How much did the cake and ice cream cost?

6. Alice jumped the rope 43 times without missing. Then on her next turn she jumped it 40 times. How many times did she jump the rope?

Adding Tens and Ones

1. Alice wants to buy a doll that costs 50 cents and a bed for her doll house. The bed costs 35 cents. How much money does she need to buy them?

> We must add to find how much money Alice needs.
> Look at the ones. We have only 5 ones.
> So we write 5 in one's place.
> Add the tens. Write 8 in ten's place.
> Alice needs 85 cents to buy the doll and the bed.

$$\begin{array}{r} 50 \\ 35 \\ \hline 85 \end{array}$$

2. Jane had 40 cents in her piggy bank. Her dad gave her 25 cents. She put this money in her bank. Then how much did she have in her bank?

3. Tom sold 20 packages of seeds, and Ann sold 33 packages. How many packages did they both sell?

4. Jack sold 20 packages of seeds one week and 17 packages the next week. How many packages of seeds did he sell?

5. Mary pulled 10 carrots. Then she pulled 12 more. How many carrots did Mary pull altogether?

6. Sue counted 30 books on one shelf and 16 on another. How many books did Sue count?

7. At the store Joe bought a can of peas for 20¢ and a head of lettuce for 12¢. How much did these vegetables cost him?

$$\begin{array}{r} 20¢ \\ 12¢ \\ \hline \end{array}$$

8. Tom bought 3 pounds of apples for 30 cents and a dozen oranges for 45 cents. How much should he pay for this fruit?

$$\begin{array}{r} 30¢ \\ 45¢ \\ \hline \end{array}$$

Practice

Copy and add:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
1.	60 30	30 30	40 50	10 80	70 10	20 60	20 40	30 50	50 20	13 24
2.	11 50	24 20	36 10	33 20	47 30	58 20	79 10	22 30	25 60	66 12
3.	40 41	60 26	10 65	30 64	50 13	30 52	10 58	30 29	20 67	17 10
4.	34 42	75 21	35 54	66 32	12 11	43 33	54 31	34 12	21 67	39 20
5.	51 46	22 32	40 37	30 58	24 70	35 60	20 50	50 30	13 14	41 58
6.	45 10	33 21	34 54	20 70	50 25	21 40	10 40	71 18	36 62	87 11
7.	23 12	25 43	50 46	81 14	49 40	41 23	17 50	30 33	43 50	65 34
8.	61 15	38 41	12 23	24 55	60 22	40 51	20 39	70 24	11 71	16 83
9.	12 30	67 32	18 80	61 12	26 40	10 76	49 50	30 65	54 40	44 35
10.	23 32	45 54	44 44	63 36	19 80	72 27	81 18	17 71	32 66	23 32

Test

$$\begin{array}{r} 25 \\ +64 \\ \hline \end{array}$$

$$\begin{array}{r} 40 \\ +30 \\ \hline \end{array}$$

$$\begin{array}{r} 60 \\ +38 \\ \hline \end{array}$$

$$\begin{array}{r} 59 \\ +40 \\ \hline \end{array}$$

$$\begin{array}{r} 30 \\ +46 \\ \hline \end{array}$$

$$\begin{array}{r} 27 \\ +62 \\ \hline \end{array}$$

$$\begin{array}{r} 15 \\ +50 \\ \hline \end{array}$$

Problems

1. Alice needs 25¢ for lunch and 30¢ for a book. How much money does she need?

2. Jane bought a pound of butter for 54 cents and a box of oatmeal for 12 cents. How much should she pay for them?

3. Jim paid 20¢ for a ball and 49¢ for a bat. How much did he pay for both?

4. One day Ann and her mother canned 17 quarts of cherries. The next day they canned 22 quarts. How many quarts of cherries did they can?

5. Tom had 60 cents. He earned 35 cents. Then how many cents did he have?

6. Mary bought some buttons and some ribbon. The buttons cost 24 cents and the ribbon, 54 cents. How much did the buttons and ribbon cost?

7. Jim gathered the eggs for his grandmother. He got 16 eggs one day and 23 the next day. How many eggs did he gather on the two days?

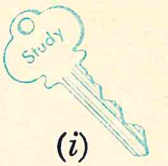
8. Sue put 20 cookies on one plate and 20 on another plate. How many cookies did she put on plates?

9. Jack got 36 pieces of paper. Then he got 23 more pieces. How many pieces of paper did he get?

10. Martha has two packages to mail. One takes 24 cents in stamps, and the other takes 65 cents in stamps. How much must she pay to send both?

[Self-test]

Do You Remember?

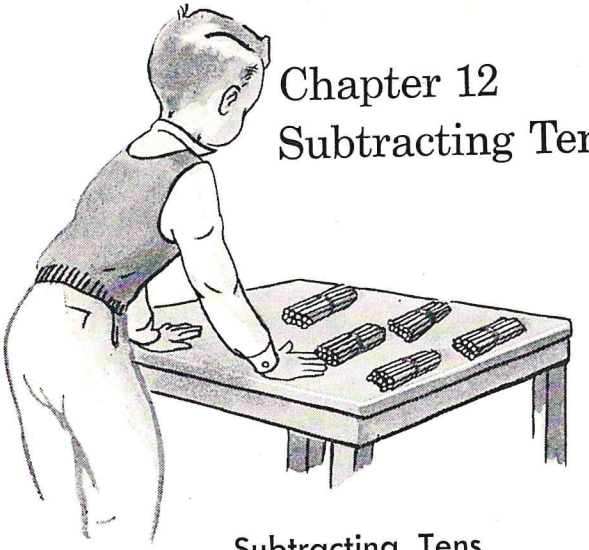


(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
8 +2	7 +4	6 +6	5 +8	3 +9	7 +8	5 +9	5 +5	4 +8
5 +6	8 +3	4 +9	1 +9	9 +3	6 +8	2 +9	3 +8	6 +9
7 +5	6 +5	7 +3	8 +4	7 +6	4 +7	8 +5	9 +2	9 +9
6 +7	7 +9	7 +7	9 +7	8 +8	4 +6	8 +9	8 +7	8 +6
9 +6	9 +8	9 +4	5 +7	9 +5	2 +7	3 +6	4 +3	2 +6
3 +5	4 +5	1 +8	2 +5	2 +8	3 +3	4 +4	9 +1	2 +3
10 −8	14 −8	11 −9	11 −7	12 −8	14 −9	13 −8	16 −9	17 −9
15 −8	12 −7	10 −7	11 −8	16 −8	15 −6	17 −8	12 −9	13 −7
11 −6	13 −9	14 −7	12 −5	15 −9	11 −5	13 −5	12 −6	16 −7
18 −9	14 −6	14 −5	13 −6	15 −7	10 −3	9 −4	8 −3	9 −7

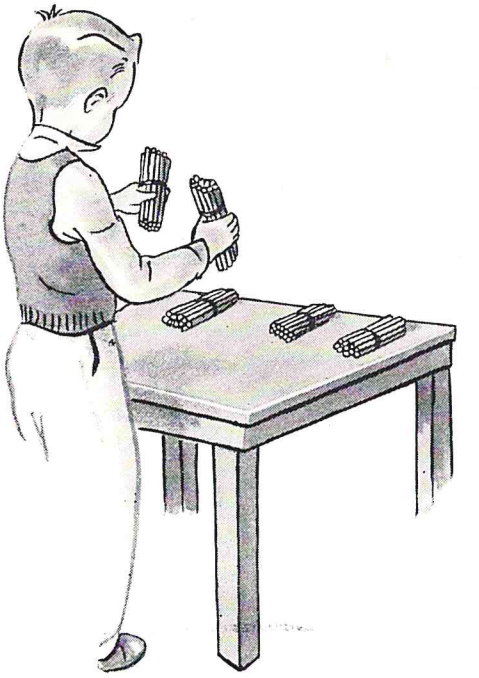
(97)

(100)

Study each addition and subtraction you do not know.



Chapter 12
Subtracting Tens

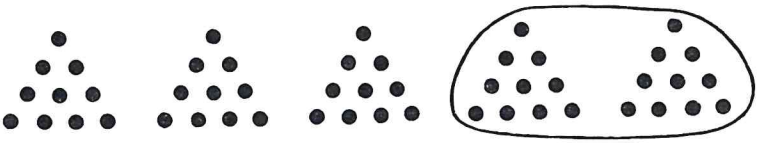


Subtracting Tens

Bill has 5 bundles of sticks.
There are 10 sticks in each bundle.

He said, "Here are five tens.
Now I will take away two tens.
I have three tens left."

"I can show it with dots," said Jim.



5 tens
−2 tens
3 tens

"I make five tens. I draw a ring around two tens to show that I take them away. I have three tens left."

We subtract tens the way we subtract ones.

Use bundles of sticks to subtract these tens:

8 tens −2 tens	4 tens −3 tens	7 tens −5 tens	6 tens −2 tens	9 tens −4 tens

Subtracting Tens

1. Ann had 80 cents. She paid 30 cents for a doll.
How many cents did she have then?

We know that 3 tens from 8 tens is 5 tens, or fifty.
So we know that 30 from 80 is 50.

We write it like this:
The zeros show that there are no ones to subtract. So we write zero in one's place in the answer.
Then we subtract the tens:
Three from eight is five.
We write 5 in ten's place.
Ann had 50 cents left.

$$\begin{array}{r} 80 \\ -30 \\ \hline 50 \end{array}$$

2. Joe had 40 papers to sell. He sold 30 of them.
How many papers does he still have to sell?

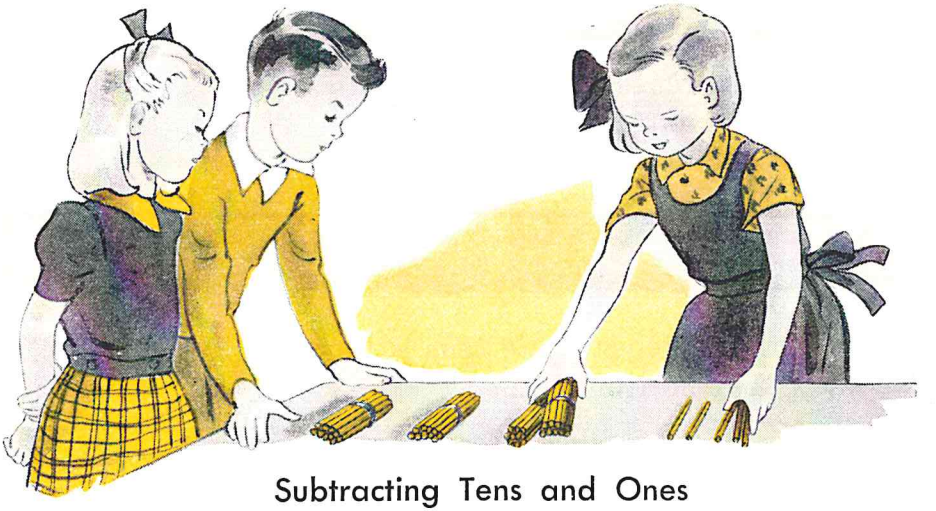
3. Mary bought 30 cards to send to friends.
She sent 20 cards. How many cards has she yet?

$$\begin{array}{r} 30 \text{ cards} \\ -20 \text{ cards} \\ \hline \text{cards} \end{array}$$

4. There were 60 new books at the library.
The children in Miss Brown's room have 20 of them.
How many new books are left at the library?

5. A toy car costs 40 cents,
and a toy truck costs 60 cents.
How much less does the car cost than the truck?
How much **cheaper** is the car than the truck?

$$\begin{array}{r} 60¢ \\ -40¢ \end{array}$$



Subtracting Tens and Ones

Mary put 4 bundles of sticks and 5 loose sticks on the table. She had 10 sticks in each bundle.

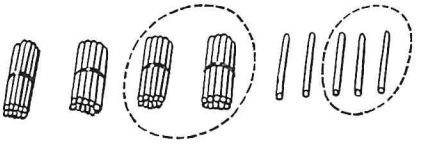
"These sticks show 4 tens and 5 ones. They show forty-five," she said.

"I am going to take away twenty-three sticks. I will take away two tens and three ones."

First, Mary took away 3 sticks. She had 2 left. Then she took away 2 bundles. She had 2 left.

"I have two bundles and two loose sticks left; so I have two tens and two ones left. I have twenty-two left," said Mary.

4 tens and 5 ones	45
−2 tens and 3 ones	−23
2 tens and 2 ones	22



Use sticks to subtract these numbers:

86	74	65	28	97	58	66	36	43	79
34	41	31	14	53	46	43	15	22	57

Subtracting Tens and Ones

1. Jack had 56 rabbits. He sold 32 of them. How many rabbits did he have then?

What should we do to find the answer?
First, we subtract the ones.
We think, "Two from six is four."
We write 4 in one's place in the answer.
Then we subtract the tens.
We think, "Three from five is two."
We write 2 in ten's place in the answer.
The answer is 2 tens and 4 ones, or 24.
Jack had 24 rabbits left.

$$\begin{array}{r} 56 \\ -32 \\ \hline 4 \end{array} \qquad \begin{array}{r} 56 \\ -32 \\ \hline 24 \end{array}$$

2. Jerry has 79 cents in his bank. How many cents will be left after he takes out 25 cents for lunch?

3. Jim had 75 cents. He spent 45 cents for lunch. How many cents did he have left?

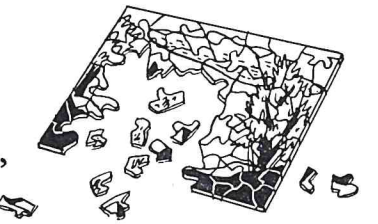
4. Alice and Jane went to the store.
Alice spent all but 12¢ of her 45¢.
Jane still had 24¢ of her 65¢.
How much did each girl have at first?
How much did each girl have left?
How much did each girl spend?
Explain the subtractions at the right.

$$\begin{array}{r} 45¢ \\ -12¢ \\ \hline 33¢ \end{array} \qquad \begin{array}{r} 65¢ \\ -24¢ \\ \hline 41¢ \end{array}$$

5. Write on paper and subtract:

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
36	69	87	58	75	76	97	78	44	88
13	17	64	27	41	32	51	64	33	25

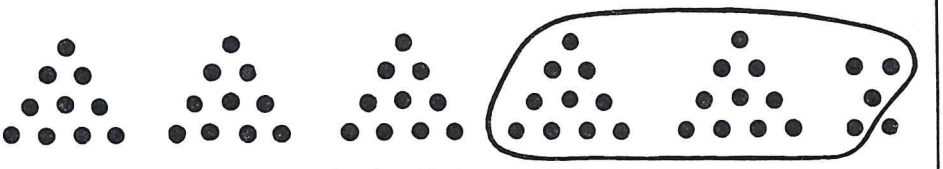
Is Your Answer Right?



1. Tom has 55 cents. He wants to buy a puzzle that costs 24 cents. If he buys it, how much money will he have left?

We subtract to find how much money Tom had left.
Our answer is 31¢. Is it right?
We can use dots to find out.

$$\begin{array}{r} 55¢ \\ -24¢ \\ \hline 31¢ \end{array}$$



Draw a ring around the dots we take away.
Count the dots that are left. Is 31 the right answer?

You can check your work:
Add the answer (31) and the number (24) that you took away. Did you get the number (55) that you started with?
If so, your answer is probably right.

Subtract	*Check*
55	31 } *Add*
−24	24 }
31	55

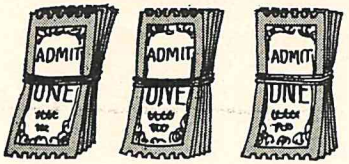
2. Alice is trying to decide which doll to buy. One doll costs 62¢, and the other doll costs 85¢. What is the **difference** in cost?

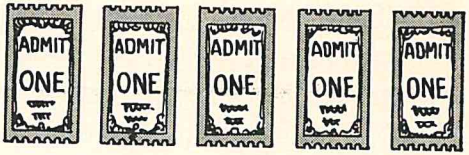
Subtract and check each answer:

	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)	(*i*)
3.	86	96	89	97	48	79	63	77	69
	21	85	12	63	14	21	52	25	43
4.	66	96	88	75	68	98	77	88	94
	32	41	66	32	53	45	44	11	83

No Ones Are Left

1. Sue had 35 tickets to sell for the school play.
She has sold 25 of them.
How many tickets has she yet to sell?





The tickets show 3 tens and 5 ones. Cover 2 tens and 5 ones with your hand. How many ones are left? How many tens are left?
One ten and no ones, or 10 tickets, are left.

We subtract the numbers to find the answer.
We first subtract the ones.
When we subtract 5 from 5, no ones are left.
So we write zero in one's place to put the ten's figure in ten's place.
Then we subtract the tens.
Sue has 10 tickets yet to sell.

$$\begin{array}{r} 35 \\ -25 \\ \hline 10 \end{array}$$

2. Mrs. Day had 32 eggs.
She used 12 eggs to make a cake.
How many eggs did she have left?

$$\begin{array}{r} 32 \text{ eggs} \\ -12 \text{ eggs} \\ \hline \text{eggs} \end{array}$$

3. Dick picked up 68 pretty stones on the beach.
He put 48 of them in the school collection.
How many stones did he keep?

4. Jane has 25 cents, and Jack has 55 cents.
How many more cents has Jack than Jane?

$$\begin{array}{r} 55¢ \\ -25¢ \end{array}$$

No Ones to Take Away

1. Jim had 54 cents. He spent 30 cents for oranges. How many cents had he then?

We subtract to find how many cents Jack had left.
Look at the ones. There are no ones
to subtract from 4. So we write 4
in one's place in the answer.
Subtract the tens. Write 2 in ten's place.
Jim had 24 cents left.

$$\begin{array}{r} 54 \\ -30 \\ \hline 24 \end{array}$$

2. Tom had 27 marbles. He gave 10 of them to Joe. How many marbles did Tom have then?

3. Mary and her mother made 48 cookies. Mary took 30 of them to the cookie sale. How many cookies did she leave at home?

4. Dick bought 48 tomato plants. He has planted 20 of them. How many does he have yet to plant?

5. Helen has 24 books, and Ann has 10 books. How many more books has Helen than Ann?

6. The boys had a peanut hunt one Saturday. Jim found 89 peanuts. Joe found 70 peanuts. How many fewer peanuts did Joe find than Jim?

7. Alice has 75 cents. If she spends 30 cents to go to the show, how much money will she have left?

8. Jack's father raised 10 bushels of potatoes. He said, "We ate 24 bushels of potatoes last year. We will eat about the same amount this year. So I must buy _____ bushels more."

Practice

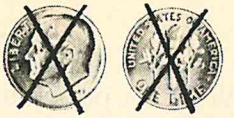
$$\begin{array}{r} 97 \\ -60 \\ \hline \end{array}$$

$$\begin{array}{r} 88 \\ -60 \\ \hline \end{array}$$

$$\begin{array}{r} 73 \\ -50 \\ \hline \end{array}$$

$$\begin{array}{r} 46 \\ -30 \\ \hline \end{array}$$

Buying at the Store



1. Jack had 25 cents.
He spent 20 cents for a knife.
How many cents did he have then?
Look at the picture. How many cents are left?

We write it like this:
There are no ones to take from 5;
so we write 5 in one's place.
We look at the tens.
We think: **Two from two is nothing.**
There are no tens left.
We do not write zero in ten's place.
Our answer is 5.
Jim had 5 cents left.

$$\begin{array}{r} 25 \\ -20 \\ \hline 5 \end{array}$$

2. Jane had 75 cents. She paid 70 cents for a doll.
The clerk gave her 5 cents in change.
Did she get the right change?

3. Before Christmas Jack saw a game that cost 85¢, but he did not buy it. After Christmas he bought it for 80¢. How much did he save?

$$\begin{array}{r} 85¢ \\ -80¢ \\ \hline \end{array}$$

Subtract and check each answer:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
4.	18	59	67	48	28	38	78	99	87	48
	15	54	64	44	23	35	76	95	80	28
5.	90	79	83	36	49	25	60	54	91	96
	30	59	20	12	36	21	50	34	70	56

Working with Tens and Ones

Write on paper and subtract:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1.	79 − 39	90 − 30	70 − 50	56 − 26	28 − 10	96 − 85	77 − 30	91 − 50
2.	27 − 14	39 − 28	39 − 25	57 − 32	87 − 24	57 − 42	89 − 60	95 − 65
3.	60 − 40	97 − 66	88 − 10	94 − 44	85 − 24	78 − 53	72 − 20	93 − 30
4.	86 − 13	79 − 54	48 − 32	75 − 42	94 − 20	67 − 27	94 − 10	99 − 29
5.	66 − 54	88 − 63	87 − 51	65 − 11	58 − 45	68 − 54	95 − 20	81 − 61
6.	50 − 20	68 − 30	64 − 11	98 − 48	30 − 10	93 − 63	79 − 61	89 − 43

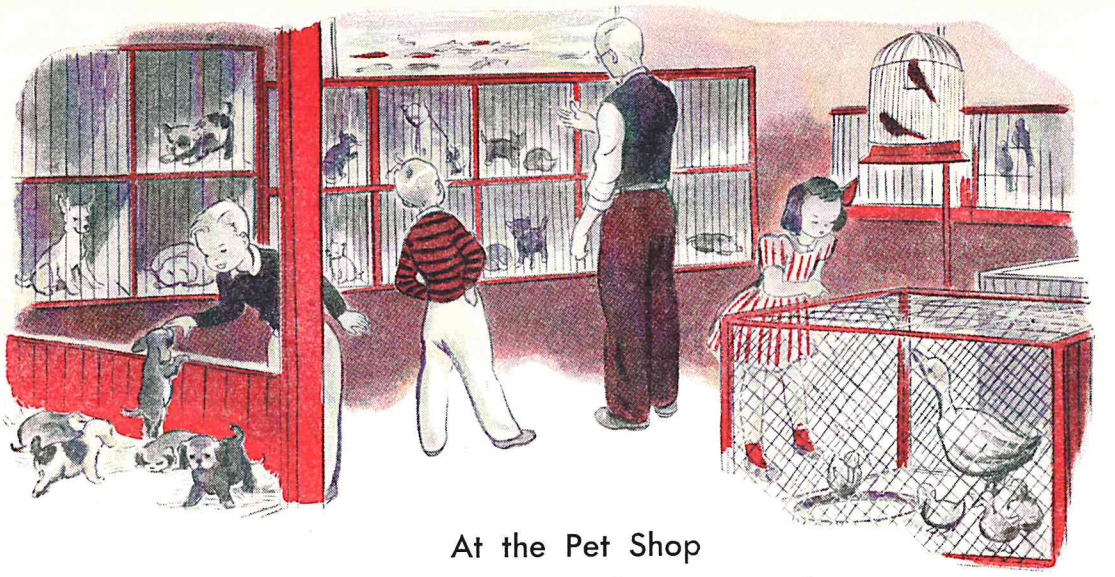
Write on paper and add:

7.	20 + 30	50 + 24	32 + 46	13 + 61	13 + 80	33 + 53	50 + 37	32 + 47
8.	33 + 45	81 + 17	32 + 53	64 + 34	54 + 25	27 + 41	62 + 20	33 + 16
9.	47 + 20	45 + 30	30 + 14	12 + 26	37 + 11	20 + 20	30 + 28	27 + 42
10.	48 + 10	60 + 31	64 + 11	20 + 60	61 + 27	73 + 26	81 + 14	41 + 30

Practice

Copy and subtract:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
1.	90 50	80 60	70 10	80 50	60 30	70 50	90 80	80 20	90 10	60 20
2.	45 25	73 23	94 34	52 42	78 38	91 41	87 17	96 26	49 29	87 27
3.	55 40	67 40	58 20	69 10	72 40	84 50	93 60	71 30	96 70	93 50
4.	86 35	89 41	67 32	98 23	87 51	79 64	28 21	89 65	57 14	88 35
5.	98 87	91 31	45 40	76 63	97 35	70 20	93 73	98 30	57 45	76 44
6.	94 24	89 16	77 36	68 28	94 71	84 60	69 64	80 40	99 36	77 67
7.	69 53	35 13	44 32	15 14	39 27	39 22	55 52	76 71	87 23	88 80
8.	88 75	34 33	55 31	66 24	39 18	88 86	87 40	95 15	87 37	98 25
9.	96 46	78 41	49 37	58 30	92 62	71 31	62 51	58 42	89 73	38 22
10.	49 19	76 53	48 25	85 45	95 60	66 13	86 21	68 52	89 35	58 24



At the Pet Shop

1. Mr. Ben had 25 gray kittens and 13 white ones.
How many kittens did he have?

How many more gray kittens than white kittens did he have?

2. There were 38 kittens and 28 puppies.
How many fewer puppies were there than kittens?

3. Mr. Ben had 28 puppies. He sold 17 of them.
How many puppies did he have then?

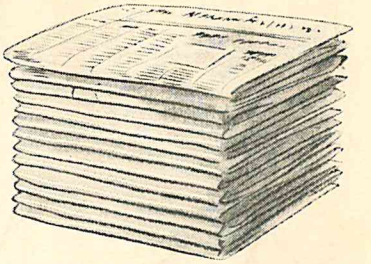
4. Now Mr. Ben has 11 puppies and 38 kittens.
How many more kittens than puppies has he?

5. There were 54 birds.
Thirty-two birds were green, and the others were yellow.
How many yellow birds were there?

6. Sue counted 36 baby ducks and 10 big ducks.
How many ducks did Sue count in all?

7. Mr. White bought 16 of the 36 baby ducks.
Then how many baby ducks were at the shop?

Selling Papers



1. One morning Tom sold 35 papers.
In the afternoon he sold 42 papers.
How many papers did Tom sell that day?

2. The next morning Tom sold 53 papers,
and that afternoon he sold 45 papers.
How many papers did he sell that day?

3. There are 96 people who buy a paper from Joe
each day and 72 people who buy one from Bob each day.
How many more people buy a paper each day
from Joe than from Bob?

4. One day Tom started with 60 morning papers.
He sold 40 of them before he went home for lunch.
How many of the papers were **not sold** by noon?

5. Of the 96 people who buy a paper from Joe, 83 pay
him each Saturday. The rest pay him once a month.
How many people pay once a month?

6. One day Tom made 86¢ selling papers.
Dick made 35¢ raking leaves that day.
How much more did Tom make than Dick?

7. Tom put 50 cents of his 86 cents
in his bank. He kept the rest to spend.
How much did he keep to spend?

8. Tom spent 20 cents for a whistle
and 16 cents for an ice-cream soda.
How much did he spend?

9. Did Tom have any spending money left?

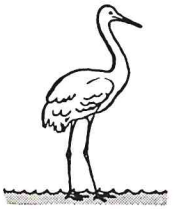
The Picnic at the Park

1. One Saturday 24 boys and 25 girls had a picnic at the park. How many children went on the picnic?

2. Sixteen boys and 11 girls played with a ball in the shallow water of the swimming pool. How many children played in the swimming pool?

3. Thirty-eight of the children ran in two races. Fourteen of them ran in the first race. The rest of them ran in the second race. How many children ran in the second race?

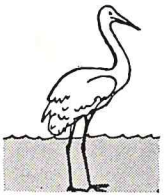
4. Of the 38 children who ran in the races, 24 were boys. How many girls ran in the races?



shallow

5. The girls put 36 plates on the table. There were 49 children. So they needed 49 plates. How many more plates should they put on the table?

6. One cake was cut into 30 pieces, and the other cake was cut into 26 pieces. How many pieces of cake were there? Were there enough pieces for each child to have one?



deep

7. They got 49 bottles of milk. Twenty-five of them were chocolate milk. How many bottles of white milk were there?

Problems

1. Mary had 50¢. She paid 20¢ for thread.
How much money did she have left?

2. Sue wants to take 36 eggs to the store.
There are 20 eggs in the basket.
How many more eggs does Sue need?

3. Jack bought a baseball that cost 65 cents.
He gave the clerk 75 cents.
The clerk gave Jack 10 cents change.
Did Jack get the right change?

4. Jim has 68 cents. Joe has 45 cents.
How much more money has Jim than Joe?

5. Ann wants to buy a plant for her mother.
The plant costs 89¢, but Ann has only 75¢.
How much more money does she need?

6. Mary read 26 pages in her book.
Helen read 20 pages in the same book.
How many fewer pages has Helen read than Mary?

7. Tom wants to buy a book.
He saw two that he liked.
One costs 98 cents, and the other costs 75 cents.
How much more does one book cost than the other?

8. One kind of butter costs 75 cents a pound.
Another kind of butter costs 60 cents a pound.
How much less does one kind cost than the other?

9. Jerry's father gave him 75 cents to pay for fixing the tire. The man charged only 50 cents.
So Jerry gave ____ cents back to his father.

Test

$$\begin{array}{r} 90 \\ -\ 50 \\ \hline \end{array}$$

$$\begin{array}{r} 78 \\ -\ 43 \\ \hline \end{array}$$

$$\begin{array}{r} 88 \\ -\ 46 \\ \hline \end{array}$$

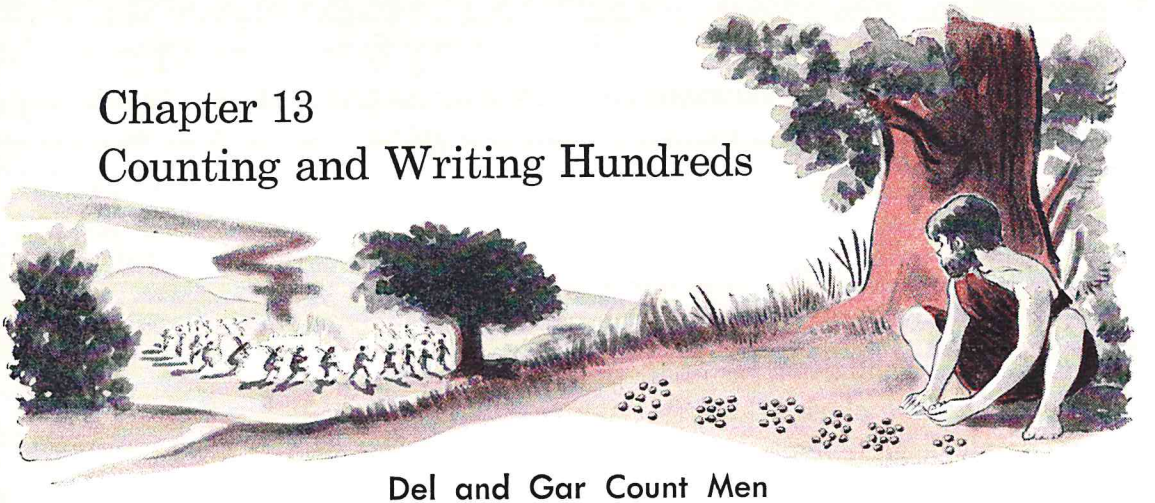
$$\begin{array}{r} 97 \\ -\ 40 \\ \hline \end{array}$$

$$\begin{array}{r} 76 \\ -\ 30 \\ \hline \end{array}$$

$$\begin{array}{r} 76 \\ -\ 56 \\ \hline \end{array}$$

$$\begin{array}{r} 55 \\ -\ 50 \\ \hline \end{array}$$

Chapter 13
Counting and Writing Hundreds



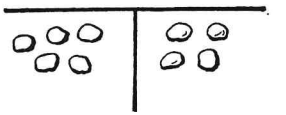
Del and Gar Count Men

Del counted the men in the enemy tribe. He used a pebble to stand for each man. He put 10 pebbles in a pile. Then he put 10 pebbles in another pile, 10 in a third pile, 10 in still another pile, and so on until he had counted all the men.

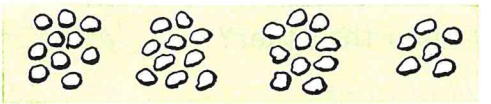
How many tens had he counted? How many ones?

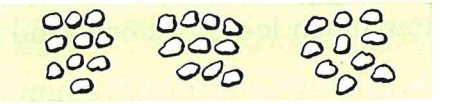
He counted **five tens and four** men.

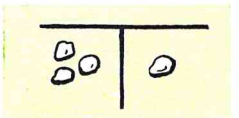
Gar had a better way to count. He used a pebble to stand for each man until he had counted ten men. Then he took up the ten pebbles and put one pebble in a place by itself at his left. This pebble stood for 10 men. When Gar had counted 54 men, his pebbles looked like this:

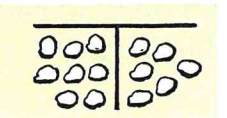


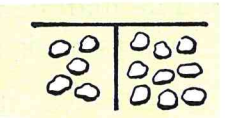
What are the numbers?

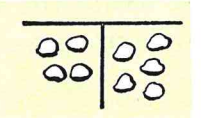




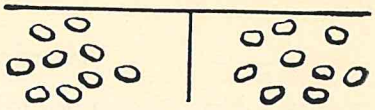


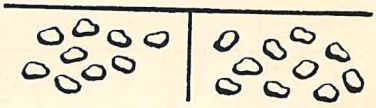




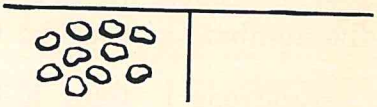


What number had Gar counted?
He had counted 9 tens and 9 ones.
Then he counted one more man.
This made 10 ones. So he picked up
the 10 pebbles in the one's pile
and put one more pebble
in the ten's pile. Why?
Then how many tens did he have?

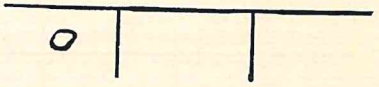




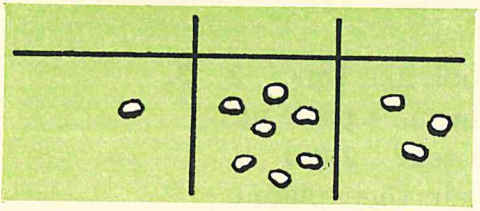
He picked up these 10 pebbles
and put one pebble in a new place.
This pebble stood for **ten tens**.
Ten tens are **one hundred**.

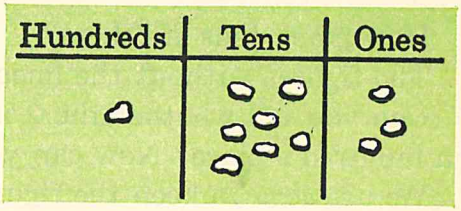


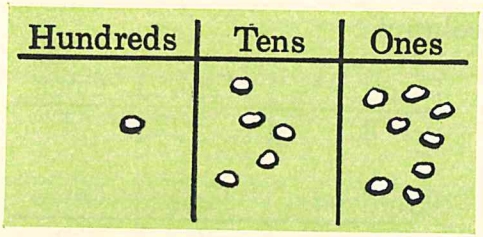
Now he has a place for hundreds,
a place for tens, and a place for ones.

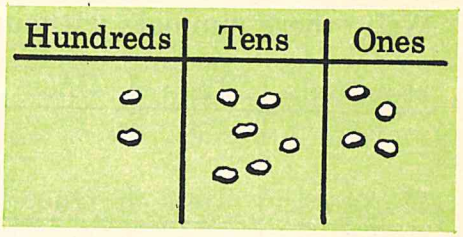


Gar knew in which places he had put the hundreds, the tens, and the ones. So he knew how many he had counted. We must know what each place means.



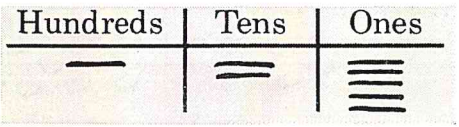


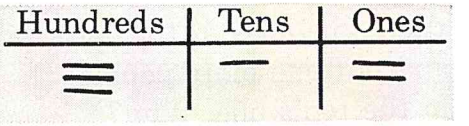




Hundreds, Tens, and Ones

For a long time people made marks in columns to show numbers. What numbers do these marks show?





When people wrote figures in columns, the numbers looked like this:

Hundreds	Tens	Ones
1	2	5

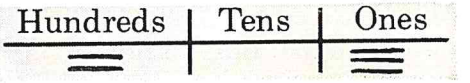
Hundreds	Tens	Ones
3	1	2

Hundreds	Tens	Ones
2	5	1

We write them like this: 125, 312, and 251.

Here is the number **two hundred three:**

Hundreds	Tens	Ones
2		3



How many tens are there?

The figures without the lines look like this: 2 **3.**

Can you tell whether the 2 is in ten's place or in hundred's place? Now can you tell? 2 0 3

We use zero to keep the figures in their places. So now we write numbers without the lines.

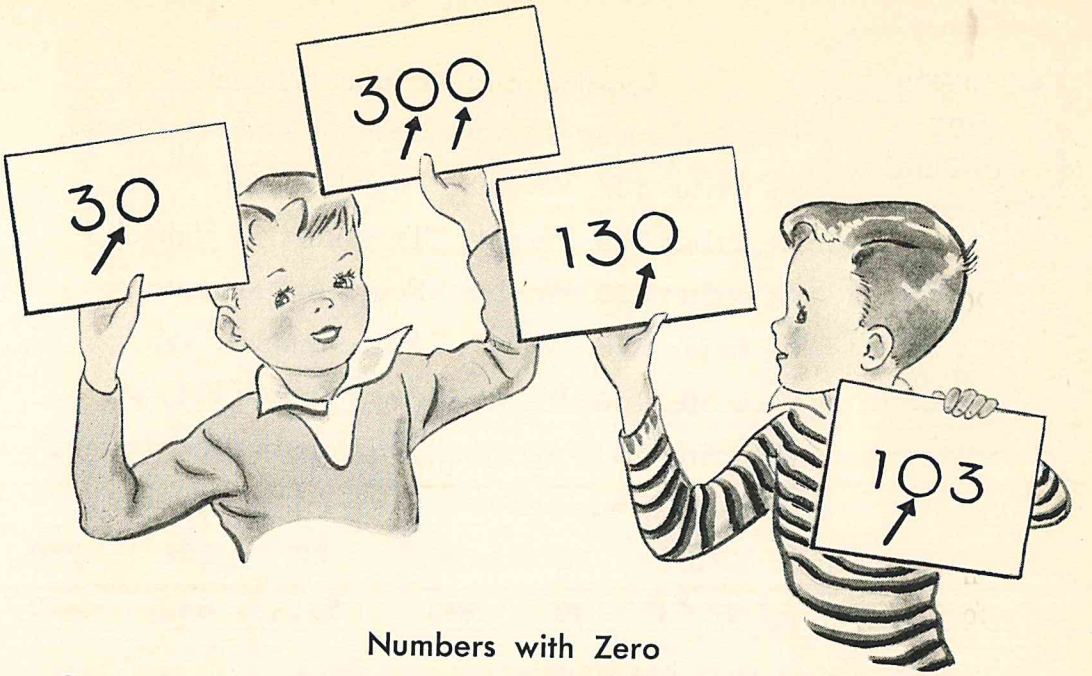
Write these numbers without columns:

Hundreds	Tens	Ones
6	3	

Hundreds	Tens	Ones
8		4

Hundreds	Tens	Ones
5		

Hundreds	Tens	Ones
2	6	9



Numbers with Zero

Some numbers have only **hundreds**. They have no tens and no ones, as one hundred; **four hundred**.

To write these numbers, we use two zeros to put the hundred's figure in hundred's place. 400

We often write numbers that have **hundreds** and **ones**, but no tens, as one hundred five.

One hundred five means 1 hundred and 5 ones.

We write 1 in hundred's place and 5 in one's place.

We have no tens, but we must write 0 in ten's place to put 1 in hundred's place. 105

We write numbers that have **hundreds** and **tens** but no ones, as **six hundred thirty**.

We write 0 in one's place to put 3 in ten's place and 6 in hundred's place. 630

Reading and Writing Numbers

This is the way we write and say some numbers:

We write: 400. We say, "Four hundred."

We write: 208. We say, "Two hundred eight."

We write: 450. We say, "Four hundred fifty."

We write: 310. We say, "Three hundred ten."

We write: 156. We say, "One hundred fifty-six."

We write: 231. We say, "Two hundred thirty-one."

Read these numbers:

76	170	176	18	180	108	208	280
900	186	168	140	861	501	642	440

Write the figures that show:

two hundreds, six tens, and nine ones
three hundreds, two tens, and seven ones
eight hundreds and five tens
eight hundreds and five ones
seven hundreds
nine tens and three ones
four tens

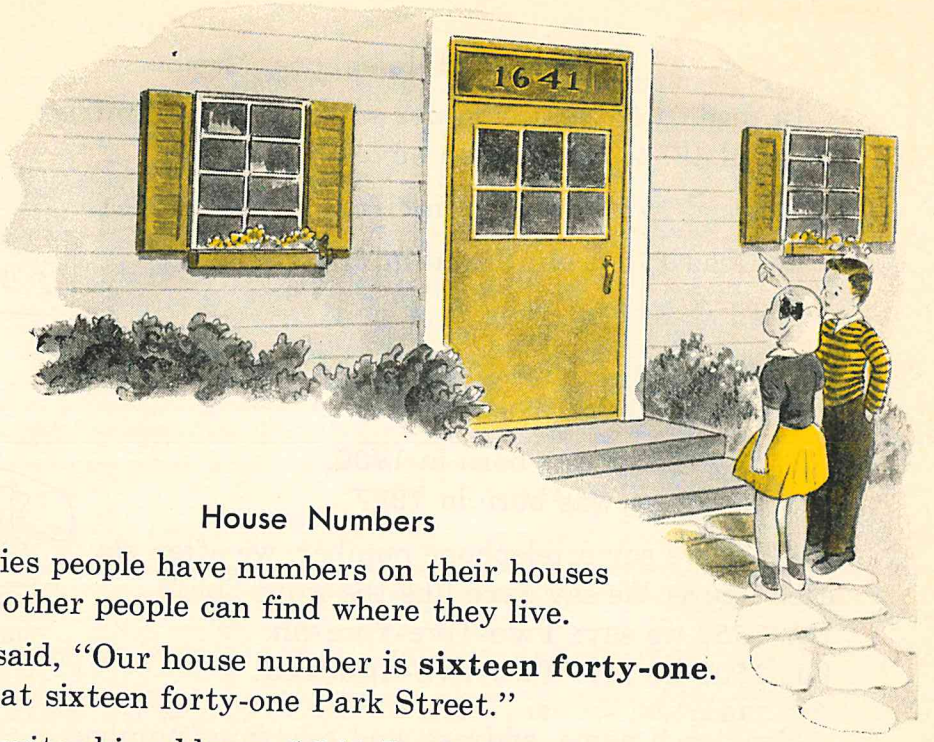
$269 \begin{cases} 200 \\ 60 \\ 9 \end{cases}$

Write with figures:

one hundred	fifty-two	one hundred fifty-two
eighty	eighty-eight	one hundred eighty
one hundred eight	one hundred one	one hundred eleven
three hundred four	two hundred	three hundred forty

Tell what these numbers mean:

875	700	306	360	98	198	980	908	711



House Numbers

In cities people have numbers on their houses so that other people can find where they live.

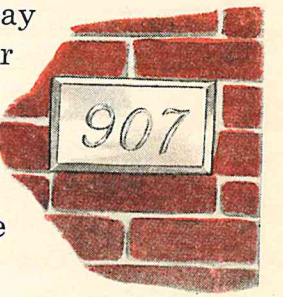
Tom said, "Our house number is **sixteen forty-one**. We live at sixteen forty-one Park Street."

Tom writes his address: **1641 Park Street.**

Sue said, "I live at **nine-oh-seven** Oak Street." She writes her address: **907 Oak Street.** We often say the word "oh" for zero in an address.

We read 1450 Elm Street: **Fourteen fifty** Elm Street.

It is easier for people to understand when we say address numbers this way. Nine-oh-seven is easier to understand than nine hundred seven.

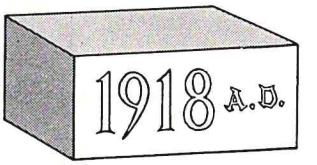


Read these addresses:

805 Grand Avenue
1728 High Street
2436 Park Avenue
903 Cherry Street
1260 Elm Street
1911 Ridge Avenue
640 First Street
700 Oak Street

Dates and Telephone Numbers

In reading dates, we do not say the word **hundred.**
We read 1776: **Seventeen seventy-six.**



We read 1950: **Nineteen fifty.**

We read 1900: **Nineteen hundred.**

Read these sentences:

1. Alice Hall was born in 1948.
She will be 10 years old in 1958.

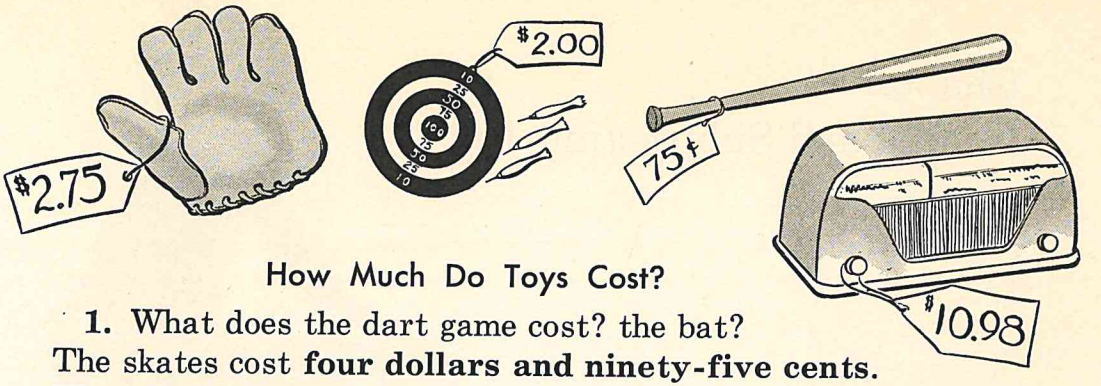
2. My father was born in 1900,
and his father was born in 1877.

telephone

When we say a telephone number, we often say each figure. We say **zero** like the word "oh."
For 2550 we say: **Two-five-five-oh.**
For 2500 we say: **Two-five-hundred.**

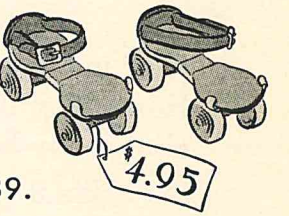
Read each name, address, and telephone number:

Adam, Ed	2130 Elm Street	1456
Alden, Charles	2050 Pine Street	1678 J
Allen, John A.	756 Pearl Street	1167
Art Cleaners	1110 Pearl Street	1533
Bacon, Fred J.	2336 Water Street	3119 M
Barnes Motor Co.	1027 High Street	108
Best, Mrs. A. A.	309 Sixth Street	2464
Bird, E. C.	2400 Front Street	2301
Black, Anna	1115 Main Street	2004
Black Hotel	2000 Main Street	2800
Car, William C.	2004 Ridge Avenue	4450
City Coal Supply	911 River Street	1122
Day, Fred G.	714 Oak Street	1234



How Much Do Toys Cost?

1. What does the dart game cost? the bat?
The skates cost **four dollars and ninety-five cents.**
We write it: $4.95.



When we have dollars and cents together,
we put a dot between the dollars and cents.
The dot is called the **cent's point.**
We say "and" for the dot when we read it.
Two dollars and eighty-nine cents is written $2.89.
Five dollars and five cents is written $5.05.

2. Read the price tag on each toy in the picture.

$ .80
$ .15
$3.00
$3.80
$ .05
$2.07

Sometimes we write the dollar sign
when we have only cents, as $.75.

We must always have two places for cents
when we use the cent's point.
If we have less than 10 cents ($.10),
we write 0 in front of the cent's figure.

3. Read these amounts of money:

$8.15 $6.07 $.09 9¢ $3.00 $3 25¢

4. Write each amount of money with figures.
Use the dollar sign and the cent's point.

one dollar and ten cents	six dollars	sixty cents
two dollars and one cent	six cents	forty dollars
ninety-seven cents	forty cents	ten cents

Chapter 14
Adding and Subtracting Tens

Adding Tens

Sue has made bundles of ten sticks.
How many bundles are in one row?
How many bundles are in the other row?
How many bundles are there in all?

Sue adds 8 tens and 7 tens
to find how many tens in all.
There are 15 tens in all.

$$\begin{array}{r} 8 \text{ tens} \\ 7 \text{ tens} \\ \hline 15 \text{ tens} \end{array}$$

Count the 15 tens by tens.
We find that 15 tens are one hundred fifty.
One hundred fifty is 1 hundred and 5 tens, or 150.

What number is the same as 8 tens?
What number is the same as 7 tens?
What number is the same as 15 tens?
Then 80 and 70 are 150.

$$\begin{array}{r} 80 \\ 70 \\ \hline 150 \end{array}$$

We write 1 in hundred's place and 5 in ten's place.
The 0 in one's place puts the 5 in ten's place
and the 1 in hundred's place.

We add tens the way we add ones.

$$\begin{array}{r} 8 \\ 7 \\ \hline 15 \end{array} \qquad \begin{array}{r} 80 \\ 70 \\ \hline 150 \end{array}$$

1. Seventy girls and 60 boys go to East School.
How many children go to this school?

What should we do to find **how many**?
There are no ones to add.
We write 0 in one's place in the answer.
Now we add the tens. 7 and 6 are 13.
Thirteen tens are 1 hundred and 3 tens.
So we write 1 in hundred's place
and 3 in ten's place.

There are 130 children in East School.

$$\begin{array}{r} 70 \\ 60 \\ \hline 0 \end{array} \qquad \begin{array}{r} 70 \\ 60 \\ \hline 130 \end{array}$$

2. Tell how we add these numbers:

97	90	60	76	73	60	48	70	28
30	50	40	40	92	54	61	35	80
127	140	100	116	165	114	109	105	108

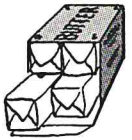
Add these numbers. Check each answer.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
3.	60	20	56	94	32	57	90	84	80
	80	80	70	43	76	52	91	65	31
4.	86	55	72	97	14	81	45	54	83
	23	64	75	62	94	78	72	85	86
5.	73	28	69	92	73	40	64	55	67
	64	91	60	27	85	80	93	93	71
6.	88	92	70	43	71	32	82	31	96
	40	16	57	93	37	84	53	96	72
7.	65	84	17	80	93	75	30	13	78
	63	54	90	70	44	92	86	91	60

Problems

1. Bill and Dick help Mr. James in his store.
One day Bill put 60 cans of fruit on the shelves,
and Dick put 45 cans on the shelves.
How many cans of fruit did they put on the shelves?

2. The boys brought 72 cans of peas
and 72 cans of corn from the back room.
How many cans did they bring in from the back room?



3. There were 56 bottles of fruit juice
on the shelves at the front of the store.
Bill put 72 more bottles on the shelves.
Then how many bottles were on the shelves?

4. Dick put 48 pounds of butter in the case.
Bill put in 70 pounds.
How many pounds of butter did they put in the case?

5. Dick counted 61 cans of coffee on the shelves.
He got 48 cans and put them on the shelves.
How many cans of coffee were on the shelves then?

6. Bill put dried apples in 54 bags.
Dick put dried apples in 62 bags.
How many bags of dried apples did the boys fill?

7. Mr. James sold 2 bags of potatoes.
One bag weighed 68 pounds.
The other bag weighed 61 pounds.
How many pounds of potatoes did Mr. James sell?

8. Mr. James arranged 72 boxes of soap flakes.
The boys arranged 82 boxes.
How many boxes of soap flakes did they arrange?
The boys arranged _____ more boxes than Mr. James.

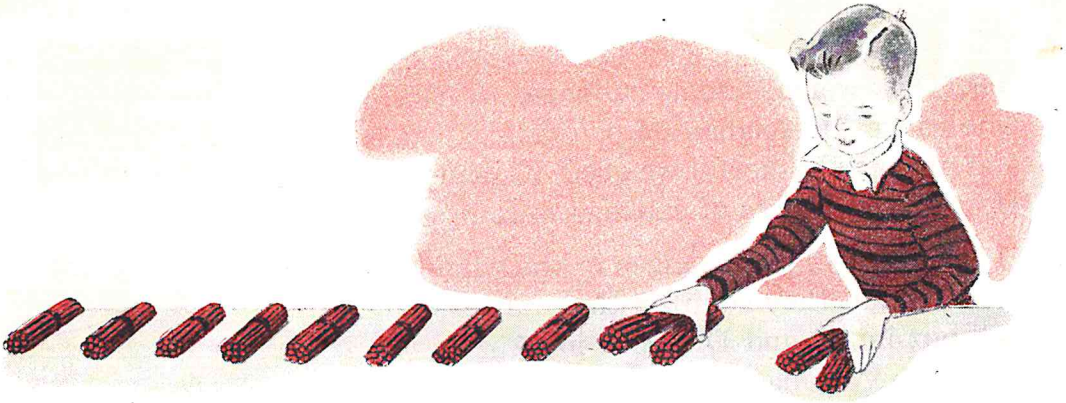
9. Dick weighed some cabbage.
One basketful weighed 85 pounds,
and another basketful weighed 60 pounds.
How many pounds of cabbage were in the baskets?

10. The boys put oranges in the window for a sale.
Just for fun they counted the oranges.
Bill put in 93, and Dick put in 82.
How many oranges did the boys put in the window?

11. At the end of the day Mr. James paid the boys.
He gave Bill 90 cents, and he gave Dick 90 cents.
How much did he pay the boys for their work?

Add these numbers. Then check each answer.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
12.	25 84	50 88	25 93	86 30	62 95	42 86	60 65	74 54	92 21
13.	93 24	42 66	82 57	94 32	70 30	94 73	83 20	52 94	71 88
14.	71 40	92 63	68 51	86 83	36 82	47 90	87 72	63 76	29 90
15.	63 92	72 85	92 41	70 64	83 43	50 56	41 75	62 82	34 85
16.	81 90	62 60	54 82	92 42	72 81	91 83	61 71	96 90	76 93
17.	21 93	39 70	58 81	42 96	77 50	65 83	96 71	84 35	93 95
18.	53 76	14 92	37 81	65 92	40 83	34 71	19 90	70 58	75 64



Subtracting Tens

1. How many bundles of sticks has Tom made?
He has put 10 sticks in each bundle.
How many tens has he in all?
How many tens is he taking away?
How many tens will be left?
Four tens from 12 tens is how many tens?
How many are 12 tens?
How many are 4 tens?
How many are 8 tens?
Then 40 from 120 is 80.

$$\begin{array}{r} 12 \text{ tens} \\ -4 \text{ tens} \\ \hline 8 \text{ tens} \end{array}$$

$$\begin{array}{r} 120 \\ -40 \\ \hline 80 \end{array}$$

We subtract tens the way we subtract ones.
There are no ones to subtract.
So we write 0 in one's place.
The 0 puts the ten's figure in ten's place.
Then we subtract the tens.
Four from 12 is 8.
We write 8 in ten's place in the answer.

$$\begin{array}{r} 120 \\ -40 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 120 \\ -40 \\ \hline 80 \end{array}$$

2. Subtract and check each answer:

(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)
110	150	140	120	160	130	170	180
50	80	60	50	70	60	80	90

3. Helen and her father were going to Big Town.
They live 116 miles from Big Town.
When they had gone 63 miles,
how far were they from Big Town?

What must you do to find the answer?
First, subtract the ones. 3 from 6 is 3.
Write 3 in one's place in the answer.
Then subtract the tens. 6 from 11 is 5.
Write 5 in ten's place in the answer.
They were 53 miles from Big Town.

$$\begin{array}{r} 116 \\ -63 \\ \hline 3 \end{array} \qquad \begin{array}{r} 116 \\ -63 \\ \hline 53 \end{array}$$

4. Tell how we subtract in these examples:

154	130	145	124	116	106	103	176
−94	−40	−81	−70	−76	−32	−50	−91
60	90	64	54	40	74	53	85

Subtract and check each answer:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
5.	153 − 72	148 − 50	129 − 69	106 − 45	170 − 90	100 − 20	131 − 71	165 − 80
6.	102 − 92	135 − 73	157 − 84	178 − 96	129 − 68	118 − 53	136 − 85	107 − 62
7.	147 − 75	155 − 65	166 − 93	135 − 92	128 − 42	139 − 65	147 − 66	158 − 75
8.	122 − 81	108 − 87	109 − 70	117 − 67	138 − 54	179 − 86	119 − 83	186 − 96
9.	164 − 84	168 − 70	175 − 95	156 − 86	143 − 70	180 − 90	118 − 68	128 − 60

Subtracting Tens

1. Jim is reading a book that has 163 pages.
He has read 90 pages.
How many more pages are there to read?

2. There are 112 pages in Joe's stamp book.
He has put stamps on 52 of the pages.
How many pages have no stamps on them?

3. Dick hid 175 peanuts for a peanut hunt.
Soon the children had found 92 of them.
Then how many peanuts were still hidden?

Subtract and check each answer:

	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)
4.	148 75	110 60	127 34	135 62	100 70	128 83	134 54	146 73
5.	110 20	155 60	106 82	124 91	139 82	106 14	156 62	119 27
6.	128 32	116 83	146 94	169 85	118 75	153 83	107 65	185 91
7.	139 96	108 90	128 64	139 53	187 95	169 74	119 99	168 74
8.	111 40	163 92	146 70	145 94	116 90	149 97	167 73	150 70
9.	123 33	145 54	113 40	149 84	129 72	136 44	155 91	121 81
10.	174 93	136 40	152 71	118 65	137 44	105 13	124 84	179 88

The Mailman

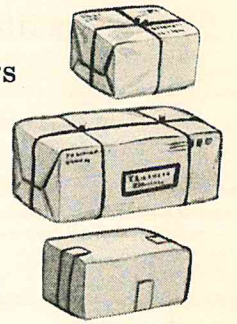
The children in Mary's room
made up problems about the mailman.

1. The mailman had 135 letters
when he left the post office.
He has delivered 72 of them.
How many letters has he yet to deliver?

2. He also had 133 papers.
He has delivered 70 of them.
How many papers are left for him to deliver?

3. Another mailman had 128 packages to deliver.
He has delivered 88 packages.
How many packages has he left to deliver?

4. He delivered 90 of his 128 packages
in the morning and the rest in the afternoon.
How many more packages did he deliver
in the morning than in the afternoon?



packages

5. In the afternoon the mailman had 107 letters
to deliver. He has delivered 90 of them.
How many letters does he still have to deliver?

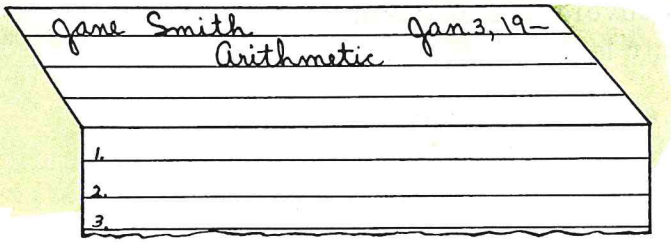
6. The mailman on our street had 146 letters
and 93 papers to deliver.
How many fewer papers than letters did he have?

7. Make up a problem about the mailman.
What will you tell about him?
What question will you ask?
Now solve the problem.

Practice

Sometimes we do not write the addition or subtraction question. We write only the answer.

Write your name on your paper.
Then fold your paper as the picture shows.

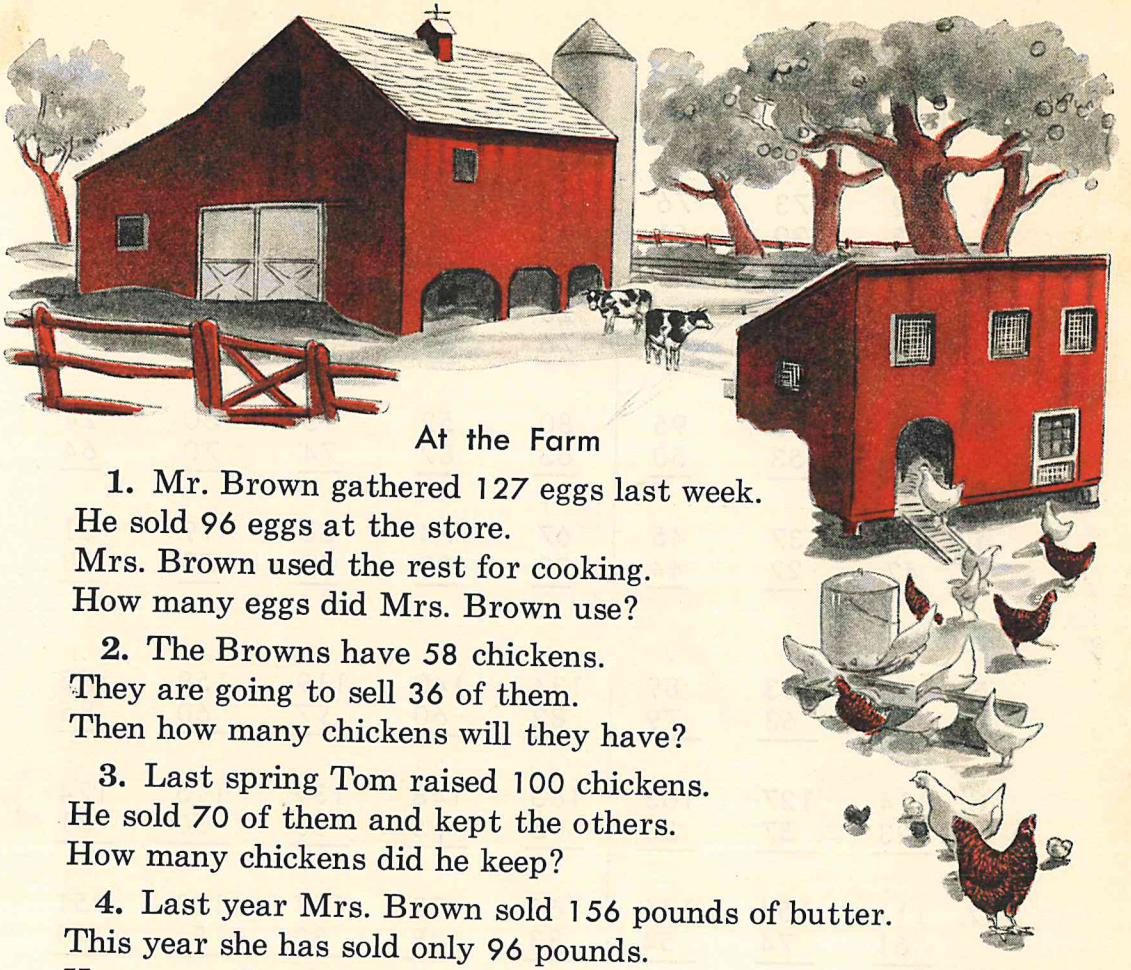


Now put the folded paper under the first row of questions. Then write the answers on the paper.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1.	60	37	51	68	95	118	104	97
	40	92	52	51	−63	−21	−30	−33

Fold the paper on the line under those answers and write the answers for the next row of questions.

2.	42	63	70	85	90	89	70	45
	86	80	70	52	45	40	30	63
3.	98	83	51	70	10	87	90	94
	61	94	60	55	90	20	73	94
4.	76	80	25	50	42	91	32	93
	80	80	84	98	93	87	84	15
5.	79	105	98	86	156	169	173	108
	−52	−55	−43	−65	−86	−83	−91	−12



At the Farm

1. Mr. Brown gathered 127 eggs last week.
He sold 96 eggs at the store.
Mrs. Brown used the rest for cooking.
How many eggs did Mrs. Brown use?

2. The Browns have 58 chickens.
They are going to sell 36 of them.
Then how many chickens will they have?

3. Last spring Tom raised 100 chickens.
He sold 70 of them and kept the others.
How many chickens did he keep?

4. Last year Mrs. Brown sold 156 pounds of butter.
This year she has sold only 96 pounds.
How many fewer pounds of butter
did she sell this year than last year?

5. Mr. Brown planted 108 apple trees.
Ninety-seven of them lived, and the others died.
How many of the trees did not live?

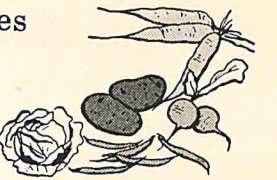
6. Tom cut 100 tulips to sell.
He sold all but 20 of them.
How many tulips did he sell?

tulips

	Test			Practice				
Add:								
	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)
1.	82 83	73 30	76 51	91 23	48 50	22 94	35 93	66 52
2.	93 64	46 90	97 80	20 76	23 83	81 56	30 59	73 86
3.	93 91	56 53	95 50	80 63	52 82	15 74	60 70	24 64
4.	16 42	37 22	45 44	67 92	74 33	86 82	19 50	31 58
Subtract:								
5.	72 51	133 63	89 79	134 82	140 60	119 97	158 60	175 85
6.	114 23	127 57	103 30	165 95	148 95	139 53	115 50	124 31
7.	111 61	154 74	146 54	165 83	98 48	117 30	103 81	151 90
8.	105 71	134 70	137 43	78 46	189 96	148 74	102 60	87 42
9.	127 91	117 70	108 48	146 82	124 53	113 32	104 24	166 95
10.	119 54	167 73	145 80	159 67	107 77	139 48	108 22	79 66

Canning Fruit and Vegetables

Betty and her mother can fruits and vegetables every summer.



vegetables

1. One day they canned 22 jars of peaches and 15 jars of pears.
How many jars of fruit did they can that day?

2. They canned 22 jars of corn and 36 jars of peas.
How many jars of vegetables did they can?

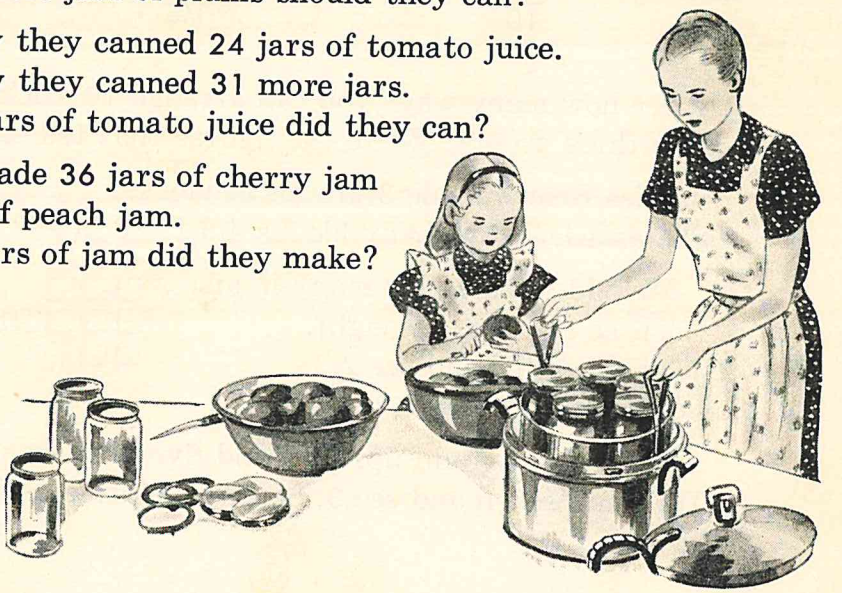
3. Betty counted 37 jars of fruit and 58 jars of vegetables.
How many more jars of vegetables than fruit did she count?

4. "We will need at least 40 jars of beans," said Mrs. West. "We have only 20 jars canned."
How many more jars of beans do they need to can?

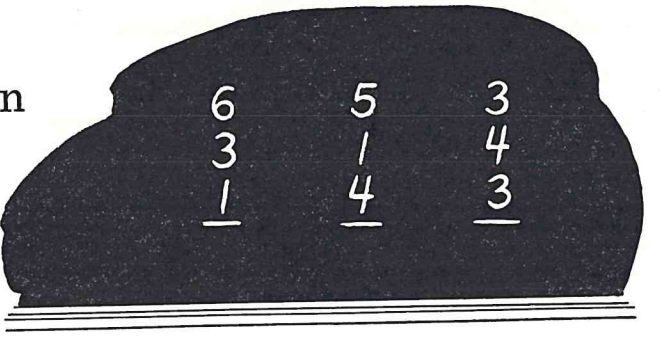
5. "We have only 30 jars of plums, and we wanted to have 36 jars," said Betty.
How many more jars of plums should they can?

6. One day they canned 24 jars of tomato juice.
The next day they canned 31 more jars.
How many jars of tomato juice did they can?

7. They made 36 jars of cherry jam and 23 jars of peach jam.
How many jars of jam did they make?



Chapter 15
Column Addition



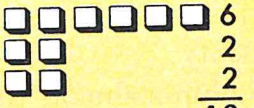
Adding Three Numbers

Each of the children has 10 blocks,
and has arranged them into three groups.
Then they used figures to tell about their groups.

Mary

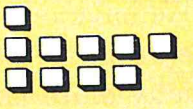
4
3
3
10

Jack



6
2
2
10

Helen

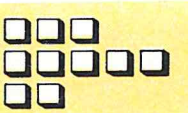


1
5
4
10

See how many ways you can arrange 10 sticks
into three groups. Write the figures that tell each way.

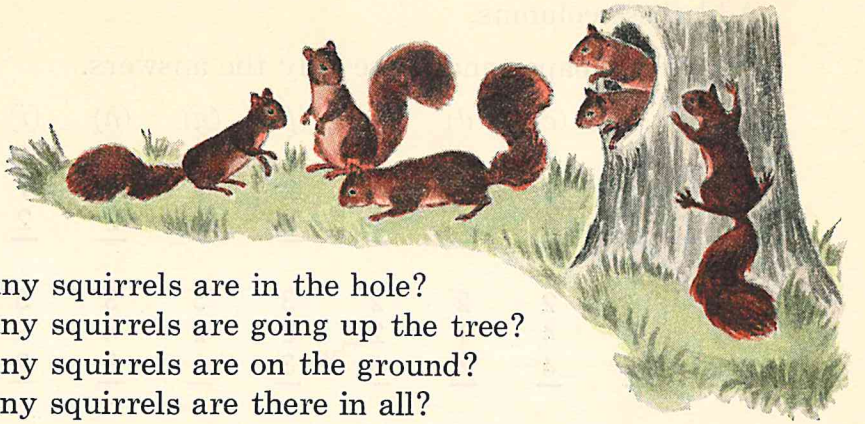
Miss Brown made 3 groups of blocks.
She asked, "How many blocks did I use in all?"

We add to find how many in all.
Three and five are eight.
Think eight, and see 2.
Eight and two are ten.



3
5
2
10

To check, we add up. Two and five are seven.
We think seven and see 3. Seven and three are ten.



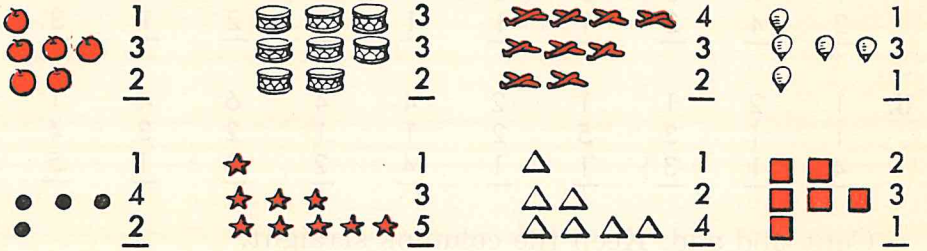
How many squirrels are in the hole?
How many squirrels are going up the tree?
How many squirrels are on the ground?
How many squirrels are there in all?

Begin at the top and add down.
Two and one are three.
Think three, and see 3.
Three and three are six.
Write 6.

$$\begin{array}{r} 2 \\ 1 \\ 3 \\ \hline 6 \end{array}$$

There are 6 squirrels in all.

1. Add these numbers. The pictures will help you.



1	3	4	1
3	3	3	3
2	2	2	1
1	1	1	2
4	3	2	3
2	5	4	1

2. Add and check. Make dot pictures if you need help.

5	2	3	4	4	2	4	3	3	2	2
3	4	1	1	1	6	2	3	4	5	4
2	3	2	5	3	2	4	4	3	3	2

For Practice

Add these columns.

Use folded paper and write only the answers.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1.	1	1	1	4	3	2	3	2	7	2	1
	1	2	3	5	4	2	2	4	1	2	3
	1	5	6	1	1	6	4	2	2	2	1
2.	6	8	2	2	2	3	5	3	5	2	3
	2	1	4	1	2	3	2	4	2	3	3
	2	1	4	7	5	3	1	3	2	3	4
3.	1	1	2	3	1	1	3	3	5	5	4
	1	2	3	2	6	4	6	4	2	1	3
	2	3	4	2	2	3	1	2	3	4	2
4.	1	1	1	2	2	3	4	3	2	2	2
	5	1	4	2	3	2	4	2	1	1	2
	3	3	1	4	5	3	2	1	4	6	3
5.	6	3	5	6	2	2	4	2	3	4	2
	1	1	3	3	6	4	3	3	3	2	6
	2	4	2	1	1	1	3	2	1	3	2
6.	1	2	1	1	2	4	4	6	4	1	3
	1	1	3	5	2	1	1	2	3	4	3
	4	1	3	1	1	4	2	1	1	5	2

Copy and add. Keep the columns straight.

7.	3, 1, 5	2, 7, 1	3, 5, 1	1, 6, 3	2, 3, 1	4, 2, 1
8.	4, 5, 1	1, 3, 4	1, 1, 8	3, 1, 6	3, 2, 5	3, 1, 3
9.	1, 1, 6	2, 1, 5	3, 1, 2	4, 4, 1	2, 1, 2	5, 3, 1

Column Addition in Problems

Read the problem carefully.
Think what the problem tells you.
Think what the question asks.
Is it a "put-together" question?
Then use the numbers in the problem
to find the answer to the question.

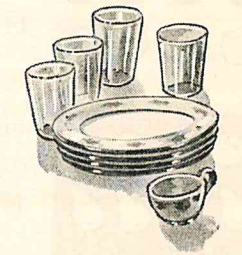
1. Ann has 1 gray kitten, 4 black kittens, and 5 spotted kittens.
How many kittens does she have?

2. Alice saw 5 robins, 3 sparrows, and 1 bluebird in a tree.
How many birds did she see in the tree?

3. Joe has 4 black rabbits, 1 gray rabbit, and 4 white rabbits.
How many rabbits has Joe altogether?

4. Jane has 5 yellow pencils, 4 red pencils, and 1 blue pencil on her desk.
How many pencils has Jane on her desk?

5. Susan helped with the breakfast dishes. She washed 4 plates, 4 glasses, and 1 cup.
How many dishes did she wash?



6. Joe sold 2 rabbits to Jim, 1 rabbit to Tom, and 6 rabbits to Jack.
How many rabbits did Joe sell to these boys?

7. Tom spent 5¢ for milk, 1¢ for gum, and 2¢ for candy.
How much did he spend in all?

5¢
1¢
2¢

Adding Columns

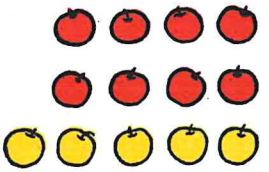
The children in Lee School filled baskets with food to send to families on Thanksgiving.

1. The children in the first grade brought food to fill 2 baskets. The children in the second grade brought food to fill 3 baskets, and the children in the third grade brought food to fill 6 baskets. How many baskets of food did they bring?

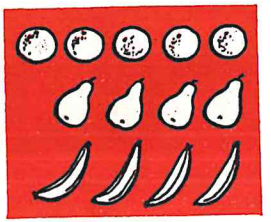
$$\begin{array}{r} 2 \\ 3 \\ 6 \\ \hline 11 \end{array}$$

We write the numbers under each other.
Then they are in a **column**.
We begin at the top and add down.
We think, "Two and three are five,
and six are eleven."
We write 11.

The children brought 11 baskets of food.



2. Alice brought 4 red apples,
and Jane brought 4 red apples, too.
Ann brought 5 yellow apples.
How many apples did these girls bring?



3. Jim brought a paper bag filled with fruit.
He took 5 oranges, 4 pears, and 4 bananas
out of the bag.
How many pieces of fruit did Jim bring?

4. Jack brought 3 oranges.
Joe brought 3 oranges,
and Jim brought 6 oranges.
How many oranges did the three boys bring?

Adding Scores

Each boy took three shots at the target.
Jack made a score of 5 the first time.
The second time he missed the target.
So he made no score that time.
To show that he had a turn but made no score,
we write 0 in the column under 5.
The third time he made a score of 3.
What was his **total** score?

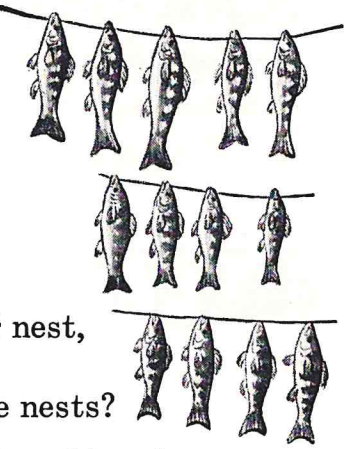
Jack added to find his total score.
He thought, "Five and three are eight."
He skipped the 0. Why?
His total score was 8.

$$\begin{array}{r} 5 \\ 0 \\ 3 \\ \hline 8 \end{array}$$

Tell the story that each score shows.
Who won the first game? Who won the second game?

Jack	Joe	Jim	Tom	Jerry
5	4	0	1	4
0	0	3	2	4
3	3	0	0	3
5	4	2	2	3
4	2	0	0	0
5	0	0	3	5

Problems



1. Jack, Joe, and Bill went fishing.
Jack caught 5 fish, Joe caught 4 fish,
and Bill caught 4 fish.
How many fish did the boys catch?

2. Tom gathered eggs for his mother.
He found 5 eggs in one nest, 3 in another nest,
and 4 in still another nest.
How many eggs did Tom find in the three nests?

3. Jim has 3 black pigs, 3 red pigs, and 5 white pigs.
How many pigs does Jim have?

4. Jane has 6 kittens, 2 puppies, and 6 rabbits.
How many pets does Jane have?

5. Alice spent 6 cents on Monday, 2 cents on Tuesday,
and 4 cents on Wednesday.
How much money did she spend in the three days?

Add. Write the answers on folded paper.
Then check each answer.

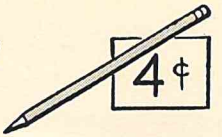
	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)	(*i*)	(*j*)
6.	3	8	4	8	4	5	4	6	5	7
	5	1	3	1	5	2	1	1	4	2
	3	7	5	6	4	7	8	5	5	3
7.	5	7	8	6	6	8	4	7	3	3
	1	2	1	2	3	1	4	2	5	3
	5	7	8	7	5	7	4	2	4	6
8.	5	5	6	7	4	3	2	2	7	2
	2	3	3	2	4	6	7	6	1	3
	6	5	4	6	5	3	2	3	8	6

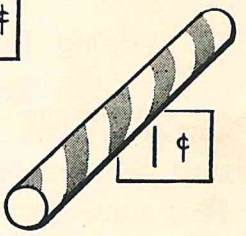
Using Column Addition

Read each problem.

What does it tell? What does the question ask?

What will you do to find the answer?





1. Jack bought a top for 8¢,
a stick of candy for 1¢,
and a pencil for 4¢.
How much should he pay for them?

2. Jane paid 5¢ for a tablet, 3¢ for a pencil,
and 3¢ for a birthday card.
How much did she spend for these things?

3. Jim had 6 pennies. His father gave him 3 more.
Then he found 1 penny in the grass.
How many pennies did he have in all?

6¢
3¢
1¢

4. Betty has 12 cents.
Can she buy a candy bar for 6¢, a stick of gum for 1¢,
and an ice-cream cone for 5¢?

6¢
1¢
5¢

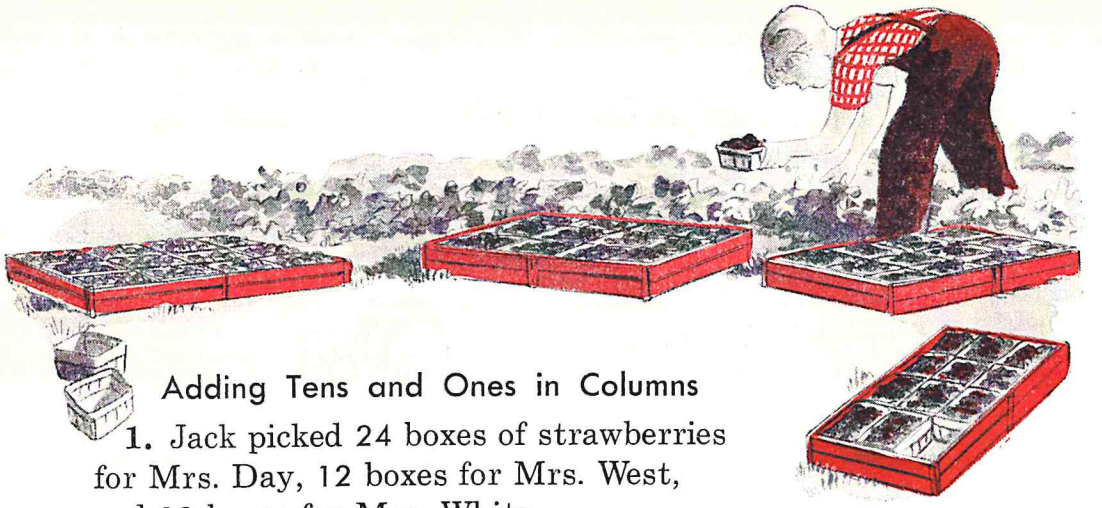
5. Add these numbers.
Write your answers on folded paper.
Then check each answer by adding up.

4	3	3	4	2	5	4	6	4	5	2	7
5	2	4	3	5	1	2	3	3	4	7	1
3	7	5	3	3	7	6	6	6	4	6	8

Copy and add. Keep your columns straight.

6. 6, 1, 7 3, 2, 6 5, 4, 3 7, 1, 8 6, 2, 7 2, 6, 3

7. 5, 3, 3 4, 3, 5 7, 2, 7 4, 5, 4 3, 6, 3 3, 5, 2



Adding Tens and Ones in Columns

1. Jack picked 24 boxes of strawberries for Mrs. Day, 12 boxes for Mrs. West, and 12 boxes for Mrs. White.
How many boxes of strawberries did he pick?

We add to find how many.
First, we add the ones.
We write 8 in one's place in the answer.
Then we add the tens.
We add tens the way we add ones.
We write 4 in ten's place in the answer.
Jack picked 48 boxes of strawberries.

$$\begin{array}{r} 24 \\ 12 \\ 12 \\ \hline 48 \end{array}$$

2. Tell how we add these numbers:

40	50	40	26	42	30	55	30	60
20	30	35	42	24	40	20	35	20
10	12	10	50	41	30	70	64	56
70	92	85	118	107	100	145	129	136

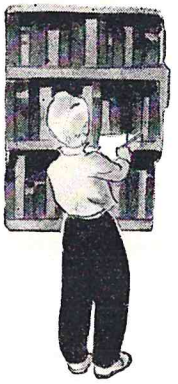
3. Add down. Then check each answer by adding up.

(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)	(*i*)	(*j*)
34	26	40	20	60	43	74	46	50	70
21	30	50	37	20	43	10	21	44	20
32	23	30	41	75	43	22	60	45	68

How Well Can You Add?

	Test			*Practice*				
	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)
1.	73	25	73	43	52	44	57	15
	10	40	14	25	25	21	20	41
	65	14	62	71	62	62	32	53
2.	31	82	56	17	12	44	60	14
	24	13	12	71	44	35	36	33
	74	14	81	21	50	30	53	62
3.	54	42	65	50	61	44	20	76
	33	16	11	17	32	50	36	20
	21	61	73	82	34	40	53	63
4.	42	22	53	30	62	72	52	54
	31	75	30	62	22	10	22	12
	64	22	55	54	54	37	72	83
5.	78	34	70	25	36	52	55	42
	20	53	25	32	43	47	33	21
	31	32	60	61	50	40	31	56
6.	52	64	51	61	81	60	43	42
	21	31	27	24	13	14	23	34
	45	24	21	74	35	53	53	42
7.	20	30	20	64	70	72	42	81
	30	58	35	23	21	13	35	11
	60	40	63	72	38	63	42	71
8.	80	45	60	51	32	34	51	80
	18	34	34	40	50	54	42	10
	80	60	65	58	27	31	36	79

At School



1. Jack helps keep track of the books at school.
There are 24 books about birds and animals,
12 books about boats and airplanes,
and 23 books about boys and girls.
How many books are there altogether?

2. The bookcase at school has three shelves.
There are 42 books on the top shelf,
44 books on the middle shelf,
and 51 books on the bottom shelf.
How many books are there in the bookcase?

3. Alice cut out 24 pictures of birds,
15 pictures of flowers, and 10 pictures of dogs.
She put them in a scrapbook.
How many pictures did she put in the book?

4. The children are going to give a play.
Alice, Jane, and Mary are selling tickets.
Alice has sold 40 tickets, Jane has sold 36,
and Mary has sold 52.
How many tickets have the girls sold?

5. Alice, Jane, and Mary ate lunch at school.
They paid 26¢, 33¢, and 40¢ for their lunches.
What was the total cost of their lunches?

6. There are 30 days in September,
31 days in October, and 30 days in November.
How many days are there in these three months?

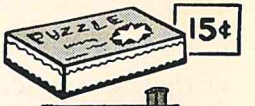
7. There are 31 days in July, 31 days in August,
and 30 days in September.
How many days are there in these three months?

Problems Using Money

4¢	$ .04
50¢	.50
75¢	.75
129¢	$1.29

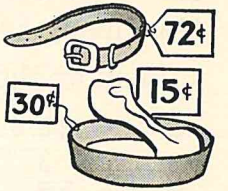
1. Jack saves some money every day.
He wants to buy a bicycle.
On Monday he put 4¢ in his bank,
on Tuesday he put in 50¢,
and on Wednesday he put in 75¢.
How much did he put in his bank on these days?

2. Jane bought a doll for 60¢, a puzzle for 15¢,
and a doll house for 64¢.
How much did these things cost altogether?



3. Last week Jack earned 25¢ selling papers
and 70¢ for working in the store.
His mother gave him 20¢ for helping her.
How much did Jack earn in all?

4. Jack spent 60¢ for a book, 10¢ for popcorn,
and 30¢ for the movies.
How much did he spend?



5. Jim bought a collar for his dog for 72¢,
a rubber bone for 15¢, and a feed pan for 30¢.
How much did he spend altogether?

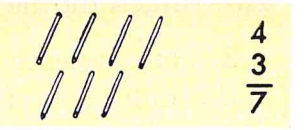
6. Jack runs errands for his neighbors to earn money
to buy Savings Stamps. He gets 5¢ for each errand.
On Saturday he mailed a package for Mrs. Brown.
He went to the store for Mrs. White,
and he took Mr. White's suit to the cleaner.
He made _____ cents for Savings Stamps.

7. On Saturday Jim spent 10¢ to ride the bus,
20¢ to go to the show, and 48¢ for lunch.
How much money did he spend altogether?

Chapter 16
Adding and Subtracting by Endings

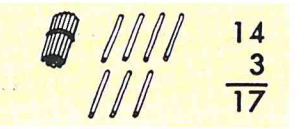
Adding by Endings

The picture shows 4 sticks and 3 sticks.
How many sticks are there in all?



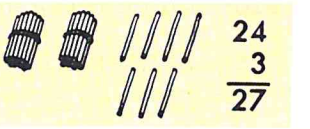
$$\begin{array}{r} 4 \\ 3 \\ \hline 7 \end{array}$$

Put a bundle of 10 sticks
with the 4 sticks.
Now how many sticks are in the top row?
How many sticks are there in all?



$$\begin{array}{r} 14 \\ 3 \\ \hline 17 \end{array}$$

Put another bundle of 10 sticks
in the top row.
Now how many are in this row?
How many are there in all?



$$\begin{array}{r} 24 \\ 3 \\ \hline 27 \end{array}$$

Look at these answers. How are they alike?

$$\begin{array}{r} 4 \\ 3 \\ \hline 7 \end{array} \quad \begin{array}{r} 14 \\ 3 \\ \hline 17 \end{array} \quad \begin{array}{r} 24 \\ 3 \\ \hline 27 \end{array} \quad \begin{array}{r} 34 \\ 3 \\ \hline 37 \end{array} \quad \begin{array}{r} 44 \\ 3 \\ \hline 47 \end{array} \quad \begin{array}{r} 54 \\ 3 \\ \hline 57 \end{array} \quad \begin{array}{r} 64 \\ 3 \\ \hline 67 \end{array} \quad \begin{array}{r} 74 \\ 3 \\ \hline 77 \end{array}$$

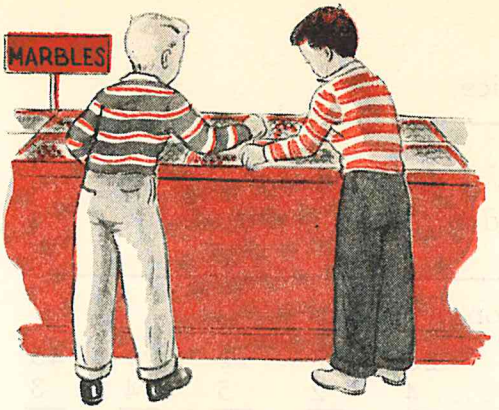
What is alike in each addition?

Four and three are seven is in each addition.
The **ones** are the same.

Say the answers without using sticks:

$$\begin{array}{r} 6 \\ 3 \\ \hline \end{array} \quad \begin{array}{r} 16 \\ 3 \\ \hline \end{array} \quad \begin{array}{r} 26 \\ 3 \\ \hline \end{array} \quad \begin{array}{r} 36 \\ 3 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ 2 \\ \hline \end{array} \quad \begin{array}{r} 23 \\ 2 \\ \hline \end{array} \quad \begin{array}{r} 53 \\ 2 \\ \hline \end{array} \quad \begin{array}{r} 33 \\ 2 \\ \hline \end{array} \quad \begin{array}{r} 13 \\ 2 \\ \hline \end{array} \quad \begin{array}{r} 43 \\ 2 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ 4 \\ \hline \end{array} \quad \begin{array}{r} 15 \\ 4 \\ \hline \end{array} \quad \begin{array}{r} 25 \\ 4 \\ \hline \end{array} \quad \begin{array}{r} 35 \\ 4 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ 3 \\ \hline \end{array} \quad \begin{array}{r} 15 \\ 3 \\ \hline \end{array} \quad \begin{array}{r} 25 \\ 3 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ 2 \\ \hline \end{array} \quad \begin{array}{r} 24 \\ 2 \\ \hline \end{array} \quad \begin{array}{r} 34 \\ 2 \\ \hline \end{array}$$



Watch the Ones

1. Jack had 12 marbles. He bought 5 more.
How many marbles has he now?

2. Bill bought 7 marbles. He had 21 before that.
Now how many marbles has he?

3. Joe had 24 marbles.
Then he won 5 marbles in a game.
How many marbles did he have in all?

4. Some marbles that Tom wants cost 35 cents.
He had 31 cents before his father gave him 4 cents.
Has he enough money to buy the marbles?

5. Dick bought 11 marbles for himself.
Then he bought 6 marbles to give to Joe.
How many marbles did he buy?

6. Dick paid 22¢ for his marbles.
and 6¢ for Joe's marbles.
How much did he pay for the marbles?

7. Bill paid 14¢ for his marbles,
and Jack paid 5¢ for his marbles.
How much did the boys pay for their marbles?

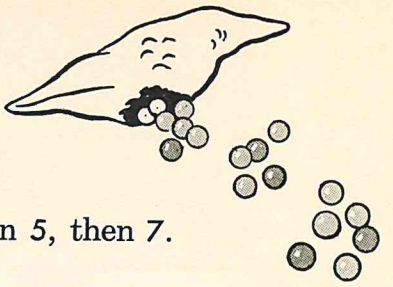
Practice

1 3 4	21 3 24	Think the answer: One and three are four. Twenty-one and three are twenty-four.

Say the answers to each addition question:

1.	36 1	32 3	11 7	23 6	25 1	23 4	27 2	22 5	21 4	45 3
2.	23 5	21 5	25 2	24 4	14 1	21 2	27 1	23 2	26 1	42 4
3.	31 4	23 1	24 5	31 8	32 2	22 7	21 6	22 4	23 3	43 6
4.	33 3	32 4	33 6	21 8	26 2	33 5	22 1	32 1	24 1	44 5
5.	22 3	21 7	34 4	35 1	33 1	36 2	32 5	32 6	33 4	53 5
6.	35 2	32 7	34 2	37 1	34 3	34 1	37 2	34 5	38 1	54 4
7.	28 1	31 2	31 6	13 1	31 5	31 3	17 2	31 7	22 6	63 4
8.	11 2	11 5	12 7	15 3	14 4	15 2	10 5	11 6	13 2	72 6
9.	11 4	12 3	12 4	13 4	14 3	16 3	17 1	14 5	15 4	56 3
10.	12 5	13 3	12 1	12 6	16 2	11 8	11 3	14 2	12 2	42 3

Column Addition



1. Jack had his marbles in a paper bag.
The bag broke, and the marbles fell out.
But he found all of them. He found 6, then 5, then 7.
How many marbles did he have?

This is the way we find the answer:

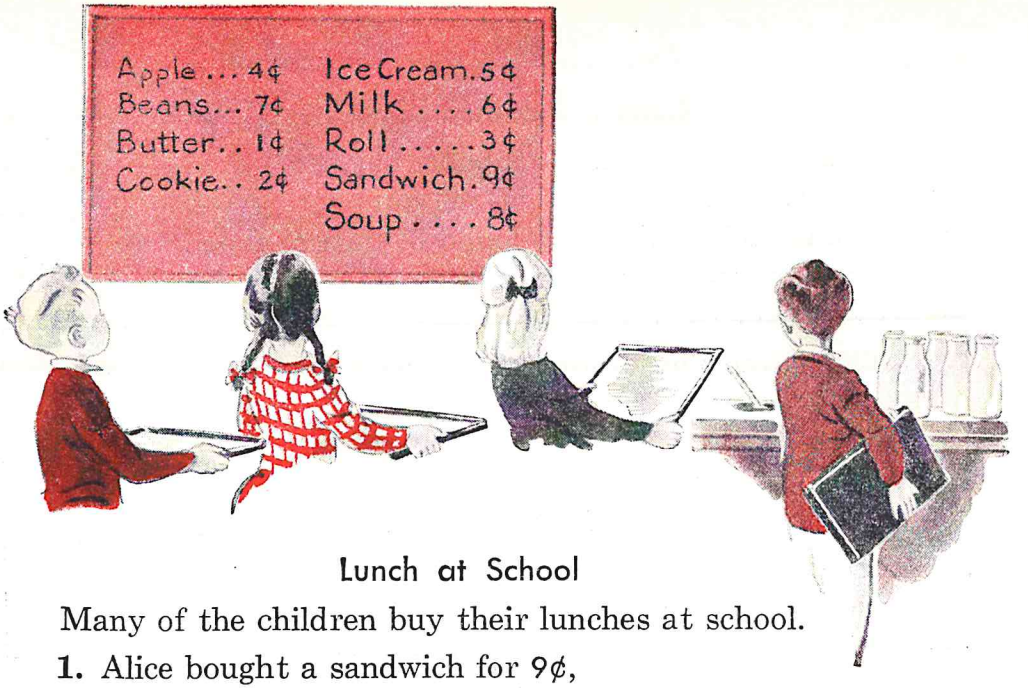
Begin at the top. See 6 / 5. Think **eleven.**
Now think **eleven** and see 7.
Think: Eleven and seven are eighteen.
Write 18.

Jack had 18 marbles.

Think	*Write*
6	6
5	5
11	7
7	18
18	

Add. Write the answers on folded paper.
Then check each answer by adding up the column.

	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)	(*i*)	(*j*)
2.	2	5	4	3	7	7	2	6	7	6
	9	8	7	9	5	7	9	8	9	1
	2	4	2	4	3	1	5	3	3	7
3.	9	7	8	9	6	3	4	9	3	4
	3	4	4	2	5	8	7	6	9	8
	2	4	7	7	3	7	1	3	5	6
4.	6	6	2	5	7	9	5	4	6	8
	9	5	9	9	7	7	6	8	6	2
	2	6	4	2	5	2	5	4	7	5
5.	8	7	6	5	4	3	1	8	7	6
	3	4	4	8	9	7	9	3	3	1
	8	8	4	3	5	7	7	2	9	9



Lunch at School

Many of the children buy their lunches at school.

1. Alice bought a sandwich for 9¢,
a glass of milk for 6¢, and a cookie for 2¢.
How much did her lunch cost?

2. Mary brought a sandwich from home.
She got soup for 8¢, ice cream for 5¢, and a cookie for 2¢.
How much should she pay for the things she bought?

3. Jack bought a sandwich, a dish of beans,
and a cookie. How much did his lunch cost?
How can you tell how much each thing cost?

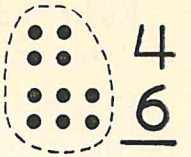
4. Joe had some beans, a glass of milk,
and a roll for his lunch.
How much did his lunch cost?

5. Sue has 20 cents.
Can she buy soup, a roll, and an apple?

6. Tom has 15 cents.
Can he buy a sandwich, soup, and butter?

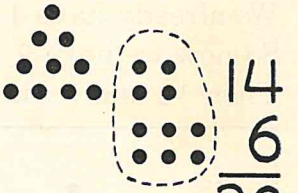
Adding by Endings

Sometimes when we add ones, we get a ten.
Four ones and 6 ones are one ten.
Four and six are ten.



$$\begin{array}{r} 4 \\ 6 \\ \hline \end{array}$$

Now we want to add 14 and 6.
We get 1 ten when we add the ones.
We already had 1 ten.
So our answer will have 2 tens.
There are no ones; so our answer is twenty.



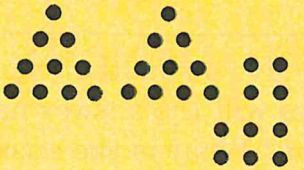
$$\begin{array}{r} 14 \\ 6 \\ \hline 20 \end{array}$$

Here we want to add 24 and 6.
When we add the ones, do we get a ten?
How many tens have we already? What is the answer?

2 tens 4 ones

6 ones

2 tens 10 ones, or 3 tens



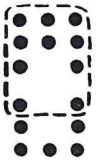
$$\begin{array}{r} 24 \\ 6 \\ \hline 30 \end{array}$$

Think the answer. Then say it.

1.	$\begin{array}{r} 8 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 65 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ 5 \\ \hline \end{array}$
2.	$\begin{array}{r} 7 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ 4 \\ \hline \end{array}$
3.	$\begin{array}{r} 2 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 23 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ 9 \\ \hline \end{array}$

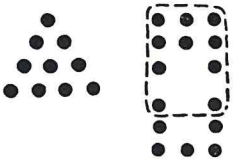
Adding by Endings

Eight and seven are fifteen,
or 1 ten and 5 ones.



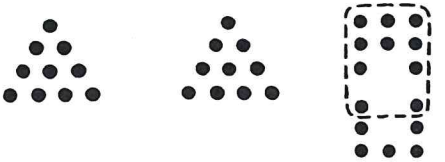
$$\begin{array}{r} 8 \\ 7 \\ \hline 15 \end{array}$$

Here we add 8 and 7 again.
So the ones make fifteen,
or 1 ten and 5 ones.
We already have 1 ten in the 18.
So now we have 2 tens and 5 ones.
Then 18 and 7 are 25.



$$\begin{array}{r} 18 \\ 7 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 28 \\ 7 \\ \hline 35 \end{array}$$



2 tens and 8 ones
7 ones
2 tens and 15 ones
or 3 tens and 5 ones

Do the ones give us another ten?
How many ones will the answer have?
How many tens? What is the answer?

$$\begin{array}{r} 38 \\ 7 \\ \hline 45 \end{array} \qquad \begin{array}{r} 48 \\ 7 \\ \hline 55 \end{array}$$

Look at the ones. Will they make another ten?
Think and say the answers:

1.	$\begin{array}{r} 12 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 8 \\ \hline \end{array}$
2.	$\begin{array}{r} 26 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 33 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ 7 \\ \hline \end{array}$
3.	$\begin{array}{r} 48 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 67 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 79 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ 6 \\ \hline \end{array}$
4.	$\begin{array}{r} 19 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 9 \\ \hline \end{array}$

36	
7	
43	

Practice

Look at the ones. They tell us:

How many ones our answer will have.
Whether we will have **one more ten.**

23
4
27

Which of these addition questions will have one more ten in the answer?

1.	47	21	63	84	76	58	94	37	44
	2	9	8	5	7	6	4	3	6

Add these numbers. First add the ones.
How many ones will the answer have?
Will there be one more ten? Say the answer.

2.	18	49	45	27	23	67	19	14	27
	5	3	6	7	9	2	5	3	8
3.	17	27	36	28	36	18	36	28	36
	6	4	6	3	3	4	5	7	8
4.	24	72	22	64	63	49	19	18	25
	9	5	8	7	8	6	7	9	5
5.	35	38	28	48	19	29	34	16	17
	9	6	4	6	6	5	6	6	7
6.	16	46	24	37	15	15	25	14	39
	4	7	8	5	5	7	8	7	4

A Test

Add 6 to each number below. Then add 7, 4, 5, 8, 9.

7.	15	25	35	45	65	32	41	73	24	18
8.	16	46	56	26	37	27	87	17	62	33
9.	38	28	88	48	19	29	59	79	34	58

Watch the Ones

1. Joe and Jim are playing marbles.
Joe has 3 marbles in the ring.
He has 8 marbles in his pocket
and 9 in a bag on the ground.
How many marbles has Joe?

$$\begin{array}{r} 3 \\ 8 \\ 9 \\ \hline 20 \end{array}$$

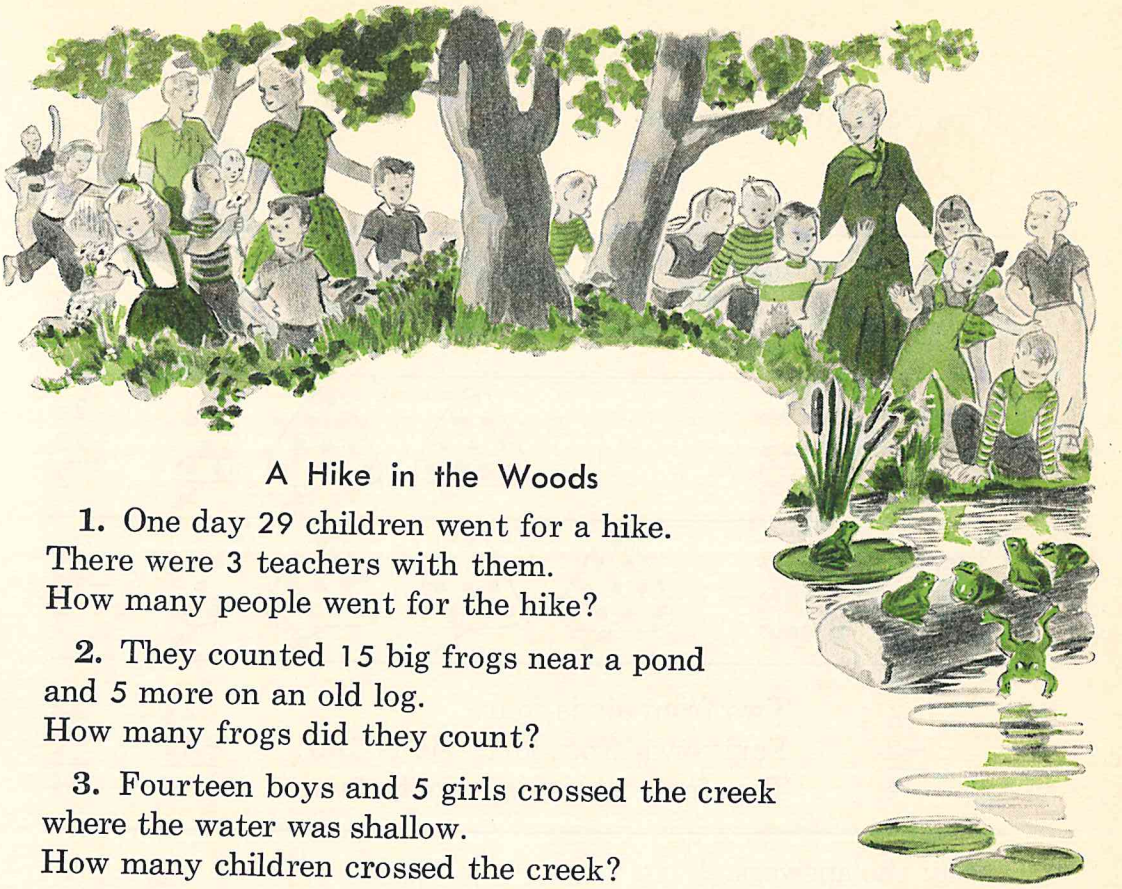
Think: Three and eight are eleven, and nine are twenty. Twenty is 2 tens, or 20.

2. Jim has 5 marbles in the ring.
He has 9 marbles in his pocket
and 7 marbles in a bag on the ground.
How many marbles does Jim have?

$$\begin{array}{r} 5 \\ 9 \\ 7 \\ \hline 21 \end{array} \qquad \begin{array}{r} 5 \\ 9 \\ \hline 14 \end{array} \qquad \begin{array}{r} 14 \\ 7 \\ \hline 21 \end{array}$$

Add. Check each answer.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
3.	3 8 9	5 8 7	4 7 9	9 2 9	7 6 8	6 8 7	8 9 3	4 9 9	9 7 6	7 8 7
4.	8 6 4	9 9 5	8 6 6	2 8 7	4 6 4	7 5 4	4 8 9	3 9 9	7 2 9	6 9 6
5.	5 9 7	7 7 7	7 6 7	6 8 8	8 4 8	8 8 8	9 9 6	9 5 8	9 9 9	8 5 6
6.	9 4 8	9 5 6	8 7 7	8 8 7	7 7 8	6 6 8	8 4 8	9 3 8	5 9 9	6 7 8



A Hike in the Woods

1. One day 29 children went for a hike.
There were 3 teachers with them.
How many people went for the hike?

2. They counted 15 big frogs near a pond
and 5 more on an old log.
How many frogs did they count?

3. Fourteen boys and 5 girls crossed the creek
where the water was shallow.
How many children crossed the creek?

4. They saw some men fishing.
One man had 32 fish, and the other man had 9 fish.
How many fish did the two men have?

5. Read the sentences:

a. Forty-five and three are _____.
b. Seventy-nine and eight are _____.
c. Twenty-three and four are _____.
d. Twenty-seven and three are _____.
e. Forty-six and five are _____.

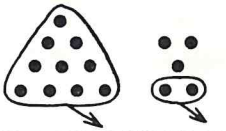
43	43	79
3	5	8
23	27	46
4	4	5

Subtracting by Endings

Two from five is three.

$$\begin{array}{r} 5 \\ -2 \\ \hline 3 \end{array}$$

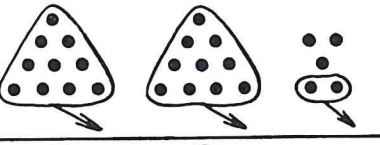
Twelve from fifteen is three.



$$\begin{array}{r} 15 \\ -12 \\ \hline 3 \end{array}$$

---

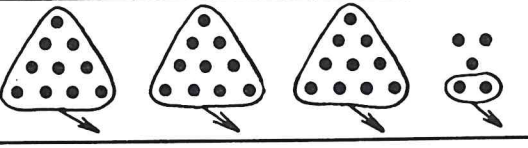
2 tens and 5 ones
2 tens and 2 ones
3 ones



$$\begin{array}{r} 25 \\ -22 \\ \hline 3 \end{array}$$

---

3 tens and 5 ones
3 tens and 2 ones
3 ones



$$\begin{array}{r} 35 \\ -32 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 6 \\ -2 \\ \hline 4 \end{array}$$

Two from six is four.
Forty-two from forty-six is four.
Two from forty-six is forty-four.

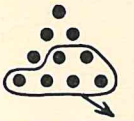
$$\begin{array}{r} 46 \\ -42 \\ \hline 4 \end{array} \qquad \begin{array}{r} 46 \\ -2 \\ \hline 44 \end{array}$$

Say the answers:

$\begin{array}{r} 39 \\ -35 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ -32 \\ \hline \end{array}$	$\begin{array}{r} 88 \\ -81 \\ \hline \end{array}$	$\begin{array}{r} 69 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ -27 \\ \hline \end{array}$	$\begin{array}{r} 68 \\ -64 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ -32 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ -21 \\ \hline \end{array}$
$\begin{array}{r} 73 \\ -72 \\ \hline \end{array}$	$\begin{array}{r} 59 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 58 \\ -56 \\ \hline \end{array}$	$\begin{array}{r} 55 \\ -54 \\ \hline \end{array}$	$\begin{array}{r} 23 \\ -21 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -12 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ -12 \\ \hline \end{array}$
$\begin{array}{r} 48 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ -21 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ -54 \\ \hline \end{array}$	$\begin{array}{r} 44 \\ -42 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ -15 \\ \hline \end{array}$	$\begin{array}{r} 66 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ -56 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ -32 \\ \hline \end{array}$
$\begin{array}{r} 28 \\ -24 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ -32 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ -12 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ -21 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ -35 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ -28 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ -12 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ -24 \\ \hline \end{array}$

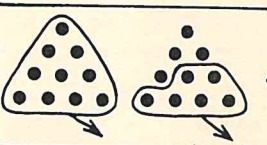
Subtracting by Endings

Six from ten is four.



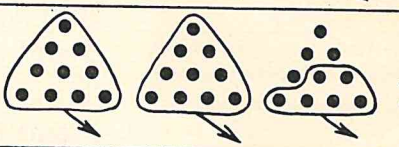
$$\begin{array}{r} 10 \\ -6 \\ \hline 4 \end{array}$$

Sixteen from twenty is four.



$$\begin{array}{r} 20 \\ -16 \\ \hline 4 \end{array}$$

Twenty-six from thirty is four.



$$\begin{array}{r} 30 \\ -26 \\ \hline 4 \end{array}$$

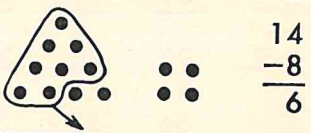
$$\begin{array}{r} 10 \\ -6 \\ \hline 4 \end{array}$$

Six from ten is four.
Thirty-six from forty is four.
Six from forty is thirty-four.

$$\begin{array}{r} 40 \\ -36 \\ \hline 4 \end{array} \qquad \begin{array}{r} 40 \\ -6 \\ \hline 34 \end{array}$$

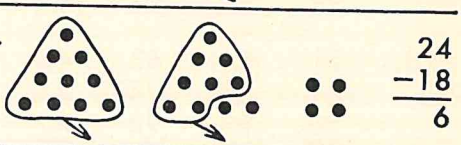
$$\begin{array}{r} 30 \\ -24 \\ \hline \end{array} \quad \begin{array}{r} 40 \\ -35 \\ \hline \end{array} \quad \begin{array}{r} 50 \\ -8 \\ \hline \end{array} \quad \begin{array}{r} 60 \\ -54 \\ \hline \end{array} \quad \begin{array}{r} 80 \\ -72 \\ \hline \end{array} \quad \begin{array}{r} 20 \\ -16 \\ \hline \end{array} \quad \begin{array}{r} 20 \\ -5 \\ \hline \end{array} \quad \begin{array}{r} 40 \\ -32 \\ \hline \end{array} \quad \begin{array}{r} 60 \\ -56 \\ \hline \end{array}$$

Eight from fourteen is six.



$$\begin{array}{r} 14 \\ -8 \\ \hline 6 \end{array}$$

Eighteen from twenty-four is six.



$$\begin{array}{r} 24 \\ -18 \\ \hline 6 \end{array}$$

Say the answers:

$$\begin{array}{r} 62 \\ -56 \\ \hline \end{array} \quad \begin{array}{r} 32 \\ -8 \\ \hline \end{array} \quad \begin{array}{r} 11 \\ -8 \\ \hline \end{array} \quad \begin{array}{r} 21 \\ -18 \\ \hline \end{array} \quad \begin{array}{r} 31 \\ -28 \\ \hline \end{array} \quad \begin{array}{r} 41 \\ -35 \\ \hline \end{array} \quad \begin{array}{r} 52 \\ -5 \\ \hline \end{array} \quad \begin{array}{r} 71 \\ -64 \\ \hline \end{array} \quad \begin{array}{r} 25 \\ -8 \\ \hline \end{array}$$

$$\begin{array}{r} 32 \\ -27 \\ \hline \end{array} \quad \begin{array}{r} 43 \\ -6 \\ \hline \end{array} \quad \begin{array}{r} 54 \\ -8 \\ \hline \end{array} \quad \begin{array}{r} 41 \\ -35 \\ \hline \end{array} \quad \begin{array}{r} 53 \\ -45 \\ \hline \end{array} \quad \begin{array}{r} 41 \\ -6 \\ \hline \end{array} \quad \begin{array}{r} 52 \\ -48 \\ \hline \end{array} \quad \begin{array}{r} 53 \\ -49 \\ \hline \end{array} \quad \begin{array}{r} 35 \\ -27 \\ \hline \end{array}$$

Watch the Tens

Jane read her book in three days. She read 75 pages on Friday, 81 pages on Saturday, and 83 pages on Sunday. How many pages were in her book?

This is a "put-together" problem. What do we do to answer the question? Add the ones first.

5 and 1 are 6, and 3 are 9.

Then add the tens.

7 and 8 are 15, and 8 are 23.

$$\begin{array}{r} 75 \\ 81 \\ 83 \\ \hline 239 \end{array}$$

There were 239 pages.

Add these numbers. Watch the tens.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
1.	21	53	40	22	43	64	41	75	80	31
	91	93	80	84	82	90	35	91	77	42
	31	51	80	32	72	53	31	53	60	53
2.	92	80	31	63	91	30	72	51	85	64
	91	84	47	61	84	39	46	81	54	71
	66	62	51	24	31	50	91	97	90	84
3.	51	64	63	42	95	71	50	65	70	95
	81	42	94	21	81	63	40	12	92	40
	56	63	92	21	53	34	30	41	87	33
4.	94	73	53	28	72	54	96	82	69	24
	91	82	91	20	72	54	43	52	90	31
	43	71	83	60	74	21	70	91	80	62
5.	40	96	58	73	93	91	64	40	70	80
	80	30	81	80	63	93	82	90	58	22
	89	93	30	36	83	45	92	50	61	35

Adding Tens and Ones

Jim has 80¢ in his bank and 37¢ in his pocket.
He earned 22¢ after school.
How much money did he have then?
Does he have enough money to buy a toy airplane that costs a dollar?

Skip the 0. Why?

Think: Seven and two are nine.
Write 9 in one's column.
Then add the tens.
Think: Eight and three are eleven, and two are thirteen.
13 tens means _____ hundred and _____ tens.
Write 3 in ten's place and 1 in hundred's place.

80¢	$ .80
37¢	.37
22¢	.22
139¢	$1.39

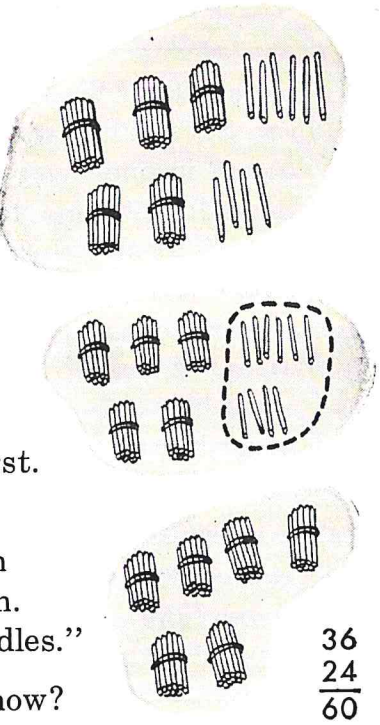
Jack has 139 cents, or $1.39.
He can buy the airplane and have some money left.

Add these numbers. Write only the answers. Then check each answer.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
1.	85	34	25	61	82	42	91	42	57	15
	60	81	91	62	52	82	46	95	71	33
	24	14	82	13	25	53	32	21	61	20
2.	63	61	81	42	92	81	73	45	51	41
	72	64	56	75	42	46	41	81	72	37
	44	34	31	72	52	42	75	31	22	61
3.	90	78	10	8	22	53	14	93	77	44
	20	30	47	30	7	4	90	83	80	31
	79	81	30	50	90	60	5	21	32	24

Chapter 17
Carrying in Addition

Another Ten



Jane made bundles of sticks.
She put 10 sticks in each bundle.
"Here are 36 sticks," said Jane.
How do the sticks show 36?
"And here are 24 more sticks."
How do the sticks show 24?
"Now I will put the sticks together
and find how many there are in all."

Jane put the loose sticks together first.
How many loose sticks are there?

"You can make another bundle of ten
with the loose sticks," said Miss Brown.
"Count this bundle with the other bundles."

How many bundles of ten are there now?
How many sticks are there altogether?

$$\begin{array}{r} 36 \\ 24 \\ \hline 60 \end{array}$$

Use bundles of ten sticks and loose sticks
to show each number below. Count the sticks together.
Make a bundle of ten from the loose sticks.

Now write the answer to each addition question:

$$\begin{array}{rrrrrrrrr} 25 & 42 & 17 & 24 & 23 & 18 & 36 & 41 & 39 \\ \underline{15} & \underline{28} & \underline{23} & \underline{26} & \underline{37} & \underline{22} & \underline{54} & \underline{49} & \underline{51} \end{array}$$

Carrying to Ten's Column

Jim has 24 cards, and Mary has 16.

"Isn't that enough cards?" asked Mrs. White. "How many cards do you have altogether?"

To find how many cards they have,
we add the ones first. 4 and 6 are 10.
We write 0 in one's place. Why?
We carry the 1 (ten). Now we add the tens.
We add the 1 ten with the tens we have.
One and 2 are 3, and 1 are 4.
We write 4 in ten's place.
Jim and Mary have 40 cards in all.

$$\begin{array}{r} {\scriptstyle 1}\\ 24\\ 16\\ \hline 0 \end{array} \qquad \begin{array}{r} {\scriptstyle 1}\\ 24\\ 16\\ \hline 40 \end{array}$$

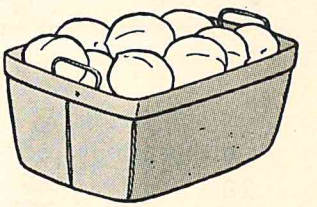
Tell how we add these numbers:

$$\begin{array}{r} 18\\ 62\\ \hline 80 \end{array} \quad \begin{array}{r} 47\\ 23\\ \hline 70 \end{array} \quad \begin{array}{r} 25\\ 65\\ \hline 90 \end{array} \quad \begin{array}{r} 82\\ 38\\ \hline 120 \end{array} \quad \begin{array}{r} 53\\ 97\\ \hline 150 \end{array} \quad \begin{array}{r} 46\\ 54\\ \hline 100 \end{array} \quad \begin{array}{r} 39\\ 61\\ \hline 100 \end{array} \quad \begin{array}{r} 91\\ 19\\ \hline 110 \end{array} \quad \begin{array}{r} 78\\ 22\\ \hline 100 \end{array}$$

Copy and add:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1.	45 25	38 22	21 39	96 54	93 87	34 66	57 43	29 71
2.	73 17	49 31	78 22	65 85	66 34	62 28	79 51	35 55

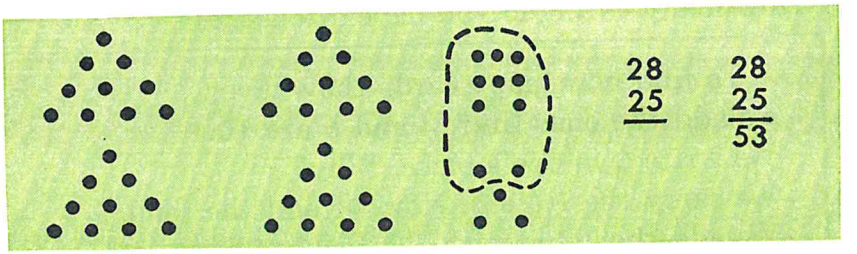
3. Jack and Jane have a fruit stand. Jack sold 25 apples, and Jane sold 75 apples. How many apples did they sell?



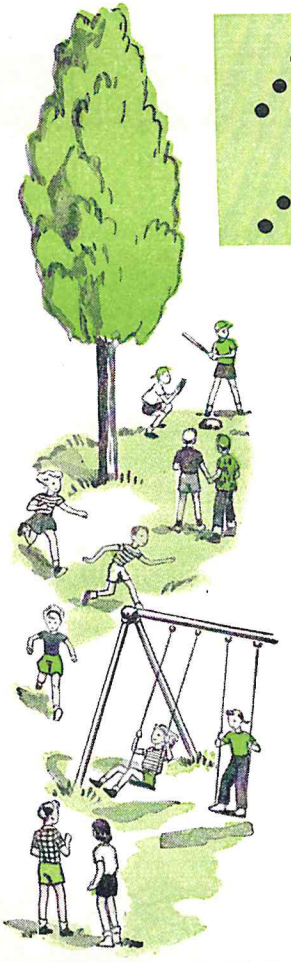
4. Jack sold 38 boxes of peaches, and Jane sold 42 boxes of cherries. How many boxes of fruit did they both sell?

Carrying to Ten's Column

There are 28 girls and 25 boys playing in the park.
How many children are playing in the park?



$$\begin{array}{r} 28 \\ 25 \\ \hline \end{array} \qquad \begin{array}{r} 28 \\ 25 \\ \hline 53 \end{array}$$



We put the ones together first.
How many ones are there?
13 is _____ ten and _____ ones.
Now we have another group of ten.
How many tens are there in all?
How many ones are there?
How many tens and how many ones are there?

$$\begin{array}{r} {\scriptstyle 1} \\ 28 \\ 25 \\ \hline 3 \end{array}$$

Now let us add the numbers.
We add the ones first. 8 and 5 are 13.
13 is _____ ten and _____ ones.
We write 3 in one's place.
We carry 1 (ten) to ten's column.
Now we add the tens.
We add the 1 ten with the other tens.
One and 2 are 3, and 2 are 5.
We write 5 in ten's place.
There are 53 children playing in the park.

$$\begin{array}{r} {\scriptstyle 1} \\ 28 \\ 25 \\ \hline 53 \end{array}$$

Tell how we add these numbers:

$$\begin{array}{r} 19 \\ 28 \\ \hline 47 \end{array} \quad \begin{array}{r} 34 \\ 27 \\ \hline 61 \end{array} \quad \begin{array}{r} 45 \\ 49 \\ \hline 94 \end{array} \quad \begin{array}{r} 76 \\ 57 \\ \hline 133 \end{array} \quad \begin{array}{r} 98 \\ 84 \\ \hline 182 \end{array} \quad \begin{array}{r} 67 \\ 87 \\ \hline 154 \end{array} \quad \begin{array}{r} 43 \\ 59 \\ \hline 102 \end{array} \quad \begin{array}{r} 29 \\ 76 \\ \hline 105 \end{array} \quad \begin{array}{r} 87 \\ 68 \\ \hline 155 \end{array}$$

Problems and Practice

1. Mrs. East helped Mary and Susan get ready for the Easter party. She boiled the eggs for the girls to color. She put 22 eggs in one pan and 28 in another pan.
How many eggs will be ready for the girls to color?

2. Susan wrote names on 14 of the eggs. Mary wrote names on 18 eggs.
On how many eggs did the girls write names?

3. Jack and Jane helped by making cards. They drew little chickens on white cards. Jane made 17 cards. Jack made 25 cards.
How many cards did they make?

Copy these numbers and add. Check each answer.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
4.	48	27	73	85	48	49	68	49	34
	45	54	19	76	86	64	79	58	79
5.	95	33	28	49	59	69	74	59	63
	39	38	26	22	47	69	48	23	78
6.	66	86	47	58	97	86	84	35	98
	17	45	97	39	99	59	69	77	43
7.	76	26	38	78	74	87	22	57	29
	86	48	43	47	95	85	68	88	37

Do You Know?

[Self-test]

Say the answer to each addition question:

(97)

3	2	4	2	5	6	3	1	5	2
5	3	3	2	2	1	3	4	4	5
1	3	6	1	7	2	5	7	1	2
2	2	2	5	1	4	3	2	3	1
3	1	3	2	1	4	4	6	1	3
1	6	4	6	7	1	4	3	8	6
2	4	4	8	5	1	5	6	8	9
7	2	5	1	1	9	8	6	3	1
5	7	9	2	4	9	9	8	7	4
5	6	4	8	7	6	9	8	7	6
3	2	7	9	6	9	6	8	7	9
7	9	8	3	7	5	4	6	3	2
4	3	8	9	8	7	4	9	8	7
8	9	2	7	7	4	9	8	4	5
8	7	6	5	8	5	6	5	3	6
5	9	8	6	9	7	5	9	8	9

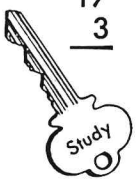
Say the answers. Watch the ones.

(189)

16	10	13	14	15	17	12	11	13	18
3	5	2	6	2	7	5	7	7	9

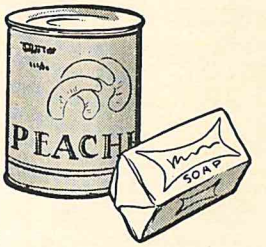
(190)

17	15	14	18	11	13	12	19	16	16
3	5	7	2	9	3	7	6	2	8



Buying at the Store

1. Henry was ready to pay the clerk in the store 63 cents for the things he had bought.
Then he remembered that he wanted a box of matches.
The matches cost 5 cents.
How much should he pay the clerk in all?



2. Susan bought sweet rolls for 24 cents and a candy bar for 6 cents.
How much should she pay for them?

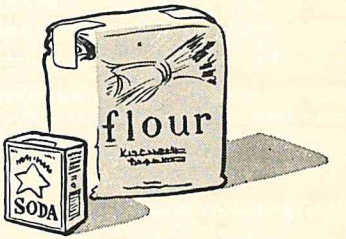
3. Alice bought a can of peaches for 39 cents and a bar of soap for 7 cents.
How much did the peaches and soap cost together?

4. Joe bought a dozen oranges for 55 cents and a box of salt for 8 cents.
How much should he pay for the oranges and bread?

5. Mrs. West bought a dozen eggs for 48 cents and a bunch of carrots for 8 cents.
She gave the clerk a half dollar, a nickel, and a penny.
Did she give him the right amount of money?

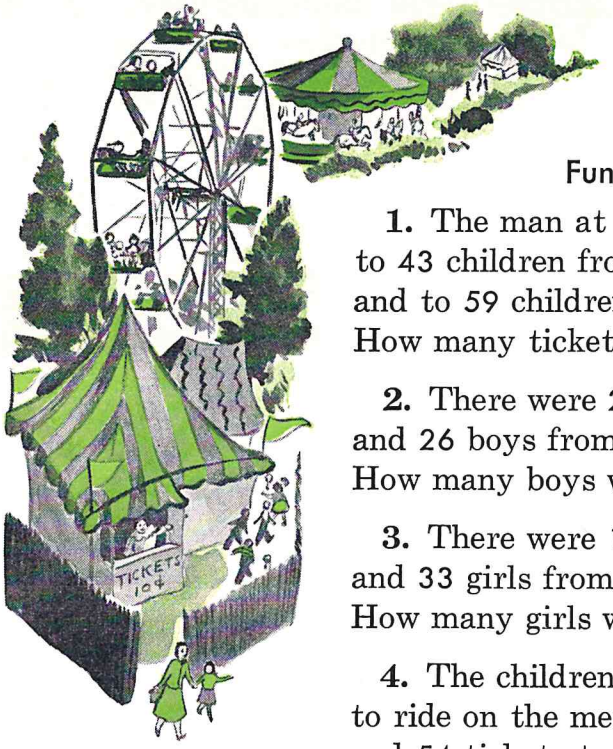
48¢	50¢
8¢	5¢
	1¢

6. Ann bought flour for 36 cents and a box of soda for 7 cents.
How much should she pay the clerk?



7. Jim has 75 cents.
Can he buy ice cream for 45 cents and sweet rolls for 24 cents?

8. Jane bought a box of cookies for 30 cents and a bottle of milk for 18 cents.
How much should she pay for them?



Fun at the Park

1. The man at the park gate sold tickets to 43 children from Central School and to 59 children from North School. How many tickets did he sell them?

2. There were 24 boys from Central School and 26 boys from North School. How many boys were there?

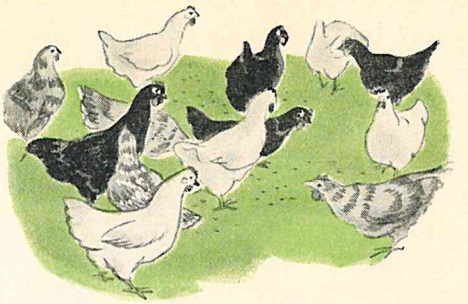
3. There were 19 girls from Central School and 33 girls from North School. How many girls were there?

4. The children bought 87 tickets to ride on the merry-go-round and 54 tickets to ride on the Ferris wheel. How many tickets did they buy?

Add these numbers. Check each answer.

	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)	(*i*)
5.	78	53	56	89	76	39	83	45	37
	29	38	86	68	65	47	87	53	57
6.	84	54	42	85	62	27	64	98	46
	26	78	36	57	29	96	47	82	55
7.	29	78	64	32	56	89	43	75	29
	96	78	59	65	58	79	68	58	34
8.	28	49	67	35	92	56	89	74	78
	76	45	74	66	88	39	19	79	95

Bob's Chickens



1. Bob has 36 white chickens, 25 black ones, and 18 brown ones. How many chickens has he?

Add the ones.
6 and 5 are 11, and 8 are 19.
Write 9 in one's place, and carry the 1 ten.
Add the tens.
Add the 1 ten with the other tens.
Think: 1 and 3 are 4, and 2 are 6, and 1 are 7.
Write 7 in ten's place.

Bob has 79 chickens.

```
 36
 25
 18
---
 79
```

2. One day Bob gathered 48 eggs. The next day he gathered 50 eggs, and the third day he gathered 44 eggs. How many eggs did he gather on the three days?

Add the ones first.
Did you get more than ten?
Remember to add this ten with the other tens.

```
 48
 50
 44
---
142
```

Add these numbers. Check each answer.

	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)	(*i*)
3.	24	13	65	20	42	24	53	39	25
	33	35	25	63	17	17	29	54	34
	15	42	53	67	63	35	14	60	63
4.	35	76	34	10	89	47	63	56	72
	43	87	54	56	90	59	83	86	47
	24	42	54	68	38	50	78	97	98

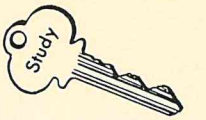
Adding Three Numbers

Add these numbers.
Write the answers on folded paper.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1.	19	43	18	46	37	50	65	30	6
	60	34	47	20	48	39	73	95	9
	16	23	20	35	42	49	41	64	5
2.	69	23	37	63	44	17	65	70	8
	31	79	27	18	91	72	70	86	7
	23	26	30	28	27	23	65	56	5
3.	67	58	32	35	27	44	80	14	9
	37	26	48	46	48	87	50	51	4
	75	34	57	37	62	13	70	48	8
4.	52	26	53	36	23	34	70	67	7
	43	59	11	86	53	29	90	95	8
	31	81	29	57	99	36	17	27	7

Copy these numbers and add. Check each answer.

5.	32	37	20	62	35	50	54	60	9
	64	31	54	40	27	80	18	70	20
	53	29	69	99	60	40	67	78	8
6.	64	12	47	50	12	15	14	55	5
	90	13	48	90	45	88	55	66	25
	51	75	20	68	14	50	21	17	75
7.	81	72	63	54	45	36	27	18	47
	70	77	99	78	95	86	97	73	3
	54	76	45	86	75	76	94	86	56



A Test in Adding

(189-90)

Think the answers:

1.	7	17	37	27	6	16	6	6
	3	3	3	3	4	4	34	54
2.	2	32	42	12	3	3	3	3
	8	8	8	8	7	27	67	17
3.	1	11	31	51	9	9	9	9
	9	9	9	9	1	21	14	44
4.	4	14	74	34	18	25	61	53
	6	6	6	6	2	5	9	7

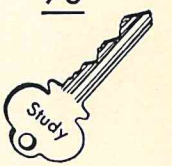
Add these numbers. Check each answer:

	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)	(*i*)
5.	2	3	5	3	1	4	8	6	8
	8	7	5	8	9	6	6	4	4
	2	7	9	3	4	1	2	3	7
6.	16	41	34	51	31	25	16	32	2
	92	64	51	61	72	42	51	83	25
	61	33	41	62	56	42	31	21	81
7.	16	40	35	66	14	37	53	68	92
	34	27	31	17	25	42	10	14	26
	52	71	48	22	60	14	74	73	47

8. A class of 28 pupils is going on a picnic. There are 2 teachers going with the pupils. For how many people should they plan lunch?

9. Each pupil will need 16 cents for carfare and 4 cents for milk. How much money will each pupil need?

88	87
62	44 (*192*) (*196*)
47	38 (*205*)
34	76



Carrying Two Tens

Jack is saving his money to buy skates.
Jane is saving her money to buy a new coat.
Both of them buy Savings Stamps.

1. Jack saved 66¢ one week,
49¢ the next week, and 45¢ the next.
How much did he have for Savings Stamps?

$\overset{2}{66¢}$	Add the ones: 6 and 9 are 15, and 5 are 20.
49¢	Write 0 in one's place, and carry 2 tens.
45¢	Add the 2 tens with the other tens.
160¢	Two and 6 are 8, and 4 are 12, and 4 are 16.
	Write 1 in hundred's place and 6 in ten's place.
$1.60	Jack has 160 cents for Savings Stamps.

2. "I have been saving my money for three weeks,"
said Jane. "I have saved 39¢, 57¢, and 75¢.
How much have I saved?"

3. Explain the additions below:
They tell how much each child saved in three weeks.

Mary	Alice	Joe	Jim	Susan	Jerry
25¢	48¢	68¢	36¢	66¢	36¢
36¢	27¢	78¢	86¢	49¢	58¢
39¢	25¢	76¢	79¢	57¢	56¢
100¢	100¢	222¢	201¢	172¢	150¢

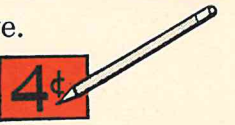
4. Add. Write the answers on folded paper.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
55	14	74	65	79	88	8	84	39	23
79	38	28	19	5	78	69	79	57	44
87	39	9	68	18	58	49	69	75	65

Problems

1. Bill wants to buy some colored paper for 8¢,
a pencil for 4¢, and an eraser for 5¢.
How much will these things cost?

2. Jim lives on the farm.
He wanted to know how many chickens they have.
He counted 62 black chickens, 83 red chickens,
and 74 white chickens.
How many chickens did he count?



3. Jack works for Mr. White.
How can he tell how many hours he worked?
In three days he worked 6 hours, 7 hours, and 8 hours.
How many hours was that in all?

4. One day Joe worked 45 minutes,
and the next day he worked 30 minutes.
How many minutes did he work in the two days?

5. Joe worked 42 minutes Saturday morning
and 65 minutes Saturday afternoon.
How many minutes did he work that Saturday?

6. Susan gave Jane some cookies.
Thirty-six cookies were yellow, and 50 were brown.
How many cookies did Susan give Jane?

7. Joe had 58 cents after he bought a cap for 90 cents.
How much money did Joe have before he bought the cap?
Why do we add to find the answer?

8. Add these columns:

17	35	48	37	45	29	88	60	57
86	49	63	48	49	44	43	97	78
19	87	57	95	87	58	89	93	27

Practice

Copy and add:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1.	20	81	93	60	60	72	80	74	80
	90	90	30	81	52	80	43	50	35
2.	90	75	50	37	68	50	76	89	80
	44	30	86	90	60	98	70	70	57

Add these columns aloud:

3.	4	2	2	5	3	4	1	2	3
	2	6	2	1	2	2	7	5	1
	1	2	3	3	5	2	1	3	3
4.	5	6	4	3	4	8	7	6	2
	4	3	3	5	3	1	2	2	5
	5	5	6	4	5	7	6	7	3
5.	8	5	7	9	6	7	6	5	9
	7	8	6	4	9	5	8	6	9
	6	4	6	8	7	8	8	9	8

Write the answers on folded paper:

6.	14	69	27	69	56	34	83	38	40
	35	47	78	70	88	46	70	79	90
	32	53	60	34	76	50	20	27	70
7.	27¢	47¢	6¢	14¢	50¢	33¢	$89	48¢	$87
	29¢	45¢	46¢	68¢	60¢	77¢	$49	42¢	$13
8.	4¢	94¢	9¢	18	90	5¢	8¢	6¢	40
	8¢	24¢	6¢	17	80	8¢	53¢	79¢	56
	5¢	76¢	25¢	80	39	7¢	4¢	15¢	79

Problems

Be sure to read each problem carefully.

What does the problem tell?

What are you asked to find?

Should you add or subtract to find the answer?

1. Jim had 55¢. He spent 50¢ for a haircut.
How many cents did he have left?

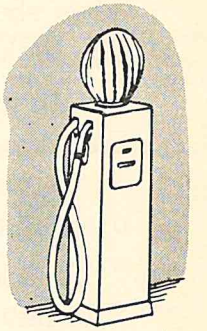
2. Tom had 75¢. He paid 30¢ for a game.
How much money did he have left?

3. The girls made 24 paper caps
for the party. The boys made 20.
How many paper caps did they make in all?

4. Jane bought some oranges for 45 cents
and a bottle of milk for 20 cents.
How much should she pay for them?

5. The children need 58 paper hats for the party.
They have made 44 of them.
How many more paper hats should they make?

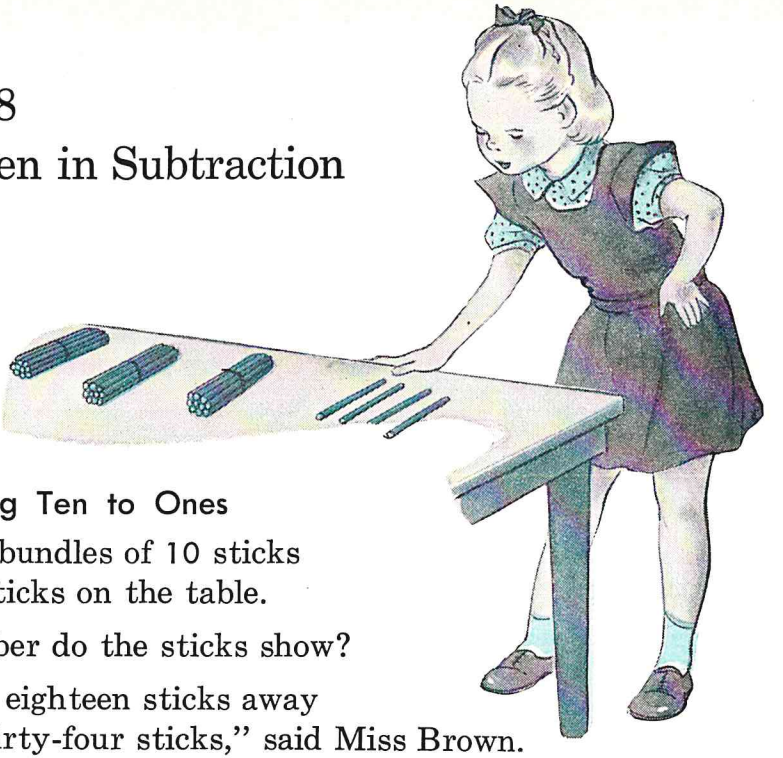
6. In Central School there are 34 boys and 45 girls
who take milk every day. How many bottles
of milk should the milkman leave each day?



7. Jack and his father started to Hardy,
a town 58 miles away. When they had gone 32 miles,
they stopped to buy gasoline.
How far did they still have to go?

8. Jane wants to buy a doll that costs
sixty-two cents. She has a half dollar.
How much more money does she need?

Chapter 18
Using a Ten in Subtraction



Changing Ten to Ones

Ann put 3 bundles of 10 sticks and 4 loose sticks on the table.

What number do the sticks show?

"Now take eighteen sticks away from your thirty-four sticks," said Miss Brown.

"That means take eight sticks from four sticks. It can't be done!" said Ann.

$$\begin{array}{r} 34 \\ -18 \\ \hline \end{array}$$

"We could open a bundle of ten to get more ones," said Miss Brown.

Ann opened a bundle of ten.
Then she had 14 loose sticks.
She took away 8 and had 6 left.

"We were to take away eighteen.
We have taken away eight.
So we must take away one ten,
or one bundle," said Ann.

That leaves 1 bundle of ten and 6 loose sticks.
"We have sixteen sticks left," said Ann.

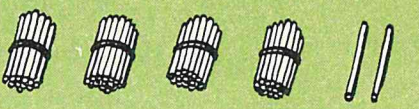
$$\begin{array}{r} 34 \\ -18 \\ \hline 16 \end{array}$$

Using a Ten

1. Use bundles of sticks and loose sticks to subtract the numbers below.
If you do not have enough loose sticks, you can open a bundle and get 10 more.

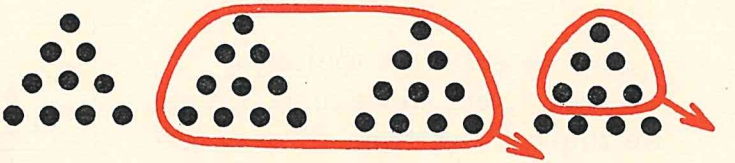
$$\begin{array}{r} 42 \\ -18 \\ \hline 24 \end{array}$$

$\begin{array}{r} 42 \\ -18 \end{array}$ Show 42.
Take away 18.



$\begin{array}{r} 45 \\ -19 \end{array}$ $\begin{array}{r} 31 \\ -15 \end{array}$ $\begin{array}{r} 52 \\ -25 \end{array}$ $\begin{array}{r} 46 \\ -28 \end{array}$ $\begin{array}{r} 37 \\ -28 \end{array}$ $\begin{array}{r} 25 \\ -8 \end{array}$ $\begin{array}{r} 44 \\ -16 \end{array}$ $\begin{array}{r} 32 \\ -17 \end{array}$

2. Let us use dots to subtract 26 from 40.



$$\begin{array}{r} 40 \\ -26 \end{array}$$

Forty is 4 tens. We draw dots to show forty.

We want to take away 2 tens and 6 ones, 26.
But we have no ones to take six from.
We must use 1 of the tens.

Six from ten is four. We have 4 ones left.

We have used 1 of the tens.
Now we take 2 tens from 3 tens. One ten is left.
We have 1 ten and 4 ones, or 14, left.
So 26 from 40 is 14.

$$\begin{array}{r} 40 \\ -26 \\ \hline 4 \end{array} \qquad \begin{array}{r} 40 \\ -26 \\ \hline 14 \end{array}$$

3. Use dots to subtract:

$\begin{array}{r} 30 \\ 15 \end{array}$ $\begin{array}{r} 50 \\ 34 \end{array}$ $\begin{array}{r} 40 \\ 19 \end{array}$ $\begin{array}{r} 50 \\ 27 \end{array}$ $\begin{array}{r} 20 \\ 8 \end{array}$ $\begin{array}{r} 30 \\ 12 \end{array}$ $\begin{array}{r} 44 \\ 17 \end{array}$ $\begin{array}{r} 36 \\ 9 \end{array}$ $\begin{array}{r} 60 \\ 38 \end{array}$ $\begin{array}{r} 53 \\ 17 \end{array}$

Changing a Ten to Ones

1. Dick delivers 45 papers each morning.
When he stops at home for breakfast,
he has 27 papers left.
How many papers has he delivered?

We subtract to find **how many are gone.**

$$\begin{array}{r} 45 \\ -27 \\ \hline \end{array}$$

$$\begin{array}{r} {}^{3}\not{4}{}^{1}5 \\ -27 \\ \hline 8 \end{array}$$

$$\begin{array}{r} {}^{3}\not{4}{}^{1}5 \\ -27 \\ \hline 18 \end{array}$$

We subtract the ones first.
We cannot take 7 from 5.
We must use 1 of the tens.
We change 1 ten to 10 ones.
Now we have 15 ones.
Seven from 15 is 8.
We write 8 in one's place.

Now we subtract the tens.
We used 1 ten; so we have 3 tens.
We think, "Two from three is one."
We write 1 in ten's place.
Dick has delivered 18 papers.

$$\begin{array}{r} 45 \\ -27 \\ \hline \end{array}$$

$$\begin{array}{r} 45 \\ -27 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 45 \\ -27 \\ \hline 18 \end{array}$$

2. Tell how we subtract 28¢ from 50¢.

5 dimes

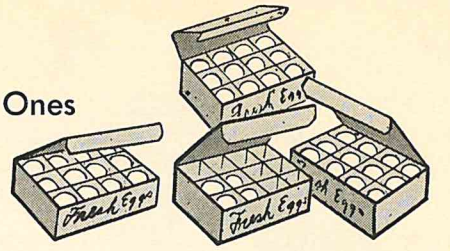
4 dimes and 10 pennies

$$\begin{array}{r} 50¢ \\ -28¢ \\ \hline 22¢ \end{array}$$

3. Tell how we subtracted in these examples:

52	71	98	63	46	71	82	84	95	67
29	36	49	45	18	24	47	55	57	39
23	35	49	18	28	47	35	29	38	28

Sometimes There Are No Ones



1. Jim sold 24 of his 40 eggs.
He kept the rest of the eggs.
How many eggs did he keep?

We subtract the ones first,
but there are no ones to subtract 4 from.
We change 1 of the 4 tens into 10 ones.
Four from ten is six.
We write 6 in one's place.
Now we subtract the tens.
We used 1 of the 4 tens.
So now we take 2 tens from 3 tens.
We write 1 in ten's place.
Jim kept 16 eggs.

$$\begin{array}{r} 40 \\ -24 \\ \hline \end{array} \qquad \begin{array}{r} {}^{3}\not{4}{}^{1}0 \\ -2\,4 \\ \hline 6 \end{array}$$

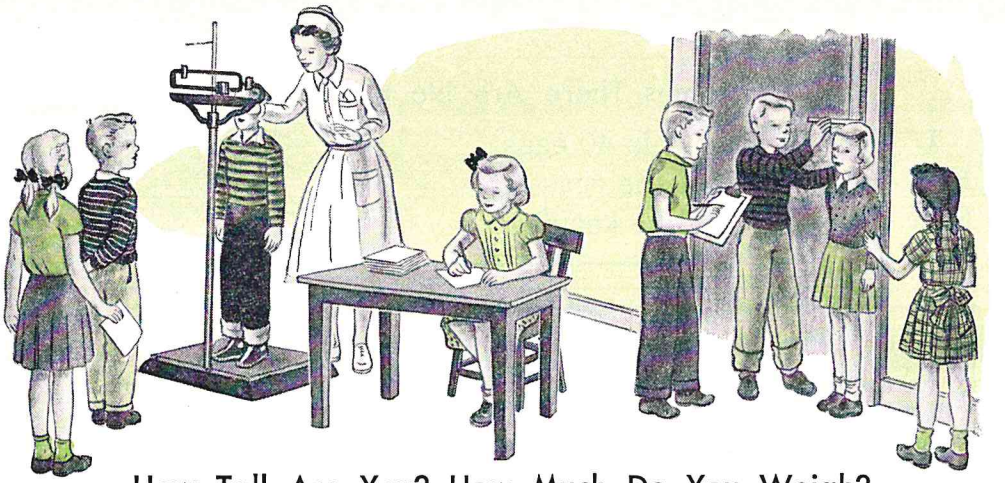
$$\begin{array}{r} {}^{3}\not{4}{}^{1}0 \\ -2\,4 \\ \hline 1\,6 \end{array}$$

2. Tell how we subtracted in these examples:

30	70	50	90	80	60	40	70	60	82
12	35	29	16	27	34	11	38	8	65
18	35	21	74	53	26	29	32	52	17

Subtract and check each answer:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
3.	60	30	50	40	90	80	70	60	30
	23	17	24	25	49	26	38	41	9
4.	51	40	67	55	70	42	80	30	20
	22	12	49	26	4	18	37	19	12
5.	31	64	83	45	72	97	68	75	70
	15	36	48	7	25	79	29	48	56



How Tall Are You? How Much Do You Weigh?

The school nurse weighs and measures the height of each pupil every year. Here are the heights and weights of some of the pupils in Miss Brown's room:

Name	*Height Inches*	*Weight Pounds*
Alice	45	48
Ann	48	62
Betty	51	60
Bob	53	72
Helen	50	54
Jim	55	69
Joe	49	58
Sue	51	59

1. Who is the tallest?
2. Who is the heaviest?
3. Who is the lightest?
4. Find two pupils who are the same height.
5. Jim is how many inches taller than Ann?
6. How much more does Bob weigh than Joe?
7. Helen is 50 inches tall, and Jim is 55 inches tall. How many inches shorter is Helen than Jim?
8. Alice weighs 48 pounds. Sue weighs 59 pounds. How much less does Alice weigh than Sue?

Subtracting with Larger Numbers

1. Susan found 140 animal pictures.
She has pasted 79 of them in her scrapbook.
How many pictures has she left to paste in her book?

We have no ones to take 9 from.
So we change 1 ten to 10 ones.
Now we take 9 from 10.
We write 1 in one's place.
140 means _____ hundred and _____ tens.
140 is also _____ tens.
We have used 1 of the 14 tens.
So we have 13 tens,
and 7 tens from 13 tens is 6 tens.
Susan has 61 pictures to paste in her book.

$$\begin{array}{r} {}^{13}\not{1}\not{4}{}^{1}0 \\ -\,7\,9 \\ \hline 6\,1 \end{array}$$

$$\begin{array}{r} 140 \\ -79 \\ \hline 61 \end{array}$$

2. Tell how we subtracted in these examples:

130	120	150	160	142	175	110	138	142
65	97	83	62	58	96	88	69	78
65	23	67	98	84	79	22	69	64

Subtract and check each answer:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
3.	120	140	132	153	180	134	110	160
	42	61	46	74	99	38	56	93
4.	112	123	134	145	156	167	168	181
	48	68	78	88	98	89	69	99
5.	151	162	145	126	172	183	125	164
	68	75	96	87	83	85	77	76

Subtracting from One Hundred

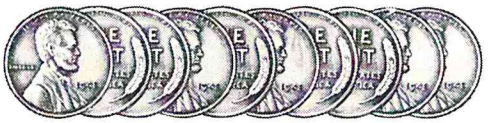
1. Joe has 100 marbles. He gave away 25 of them. How many marbles did he have then?

$\begin{array}{r} {}^{9} \\ \cancel{10}^{1}0 \\ -25 \\ \hline 75 \end{array}$	One hundred is 10 tens. We change 1 ten to 10 ones. Then we subtract the 5 from 10. We used 1 of the 10 tens. So we now have 9 tens. Subtract the tens.
$\begin{array}{r} 100 \\ -25 \\ \hline 75 \end{array}$	Joe had 75 marbles after he gave away 25.

2. Tell how we subtract 38¢ from $1.

$$\begin{array}{r} 100¢ \\ -38¢ \\ \hline 62¢ \end{array}$$

9 dimes



10 pennies

3. Tell how we subtract these numbers.
We will change 1 of the 10 tens to 10 ones.
Then we will have 9 tens to subtract the tens from.

100	100	100	100	100	100	100	100
36	68	77	44	83	51	78	62
64	32	23	56	17	49	22	38

Subtract and check each answer:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
4.	100	100	100	100	100	100	100	100
	29	12	35	23	71	68	54	86
5.	110	106	102	110	105	117	116	108
	72	38	49	34	58	88	79	69

How Well Can You Subtract?

	Test			*Practice*				
	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)
1.	82 53	95 37	141 99	154 96	92 74	101 12	118 41	77 29
2.	90 46	100 39	100 65	150 56	100 28	106 58	110 20	164 70
3.	130 98	150 76	104 38	102 76	85 48	121 27	147 63	130 31
4.	128 45	144 57	123 96	97 25	74 45	103 34	100 47	100 96

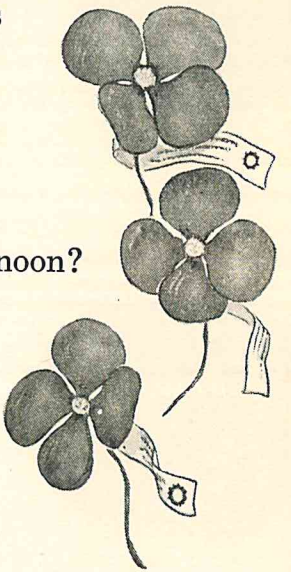
5. Tom and Jack pulled 100 onions.
They sold 64 of them. How many onions were left?

6. Mary, Sue, and Jane each took 75 poppies to sell on Poppy Day.

Mary sold 56 of hers in the morning.
How many did she still have to sell?

Jane sold 47 of her poppies in the morning.
How many did she have left to sell in the afternoon?

Sue sold 29 of her poppies in the morning and the rest of them in the afternoon.
How many did she sell in the afternoon?



7. Mrs. East made 42 jars of peach jam.
Tom sold 25 of them one Saturday.
How many jars of peach jam were left?

Problems

1. Mr. Brown planted 132 little trees.
Only 85 of them lived. The others died.
He will plant a new tree for each one that died.
How many new trees should he buy?

2. Jack's father bought 108 cabbage plants.
He has planted 40 of them.
How many are yet to be planted?

3. Mr. West wants to fence his garden.
He has 19 posts. He needs 38 posts in all.
How many posts should he get?

4. Mary thinks that she will need 60 cookies for her party. Her mother has made 32 cookies.
How many more cookies should be made?

5. Mary needs 40 oranges.
Her father got a bag with 24 oranges in it.
How many more oranges should Mary get?

6. Mary needs 31 prizes. She has bought 16.
How many more prizes should she buy?

7. The children are having a program.
They need 100 chairs for the visitors.
The boys have carried in 44 chairs.
How many more chairs should they get?

8. The girls made 56 paper flowers to sell.
They sold all but 19 of them.
How many flowers did the girls sell?

9. Joe counted 60 boys and 48 girls.
How many more boys than girls did he count?

10. Jim weighs 72 pounds. Joe weighs 58 pounds.
Which boy weighs more? How much more?

11. Sue and Ann weighed themselves on the scale at the same time. Together they weighed 121 pounds. Then Sue weighed herself. She weighed 59 pounds.
How many pounds does Ann weigh?

12. Sue weighs 59 pounds,
and her baby sister weighs 15 pounds.
How much more does Sue weigh than the baby?

13. The children are making pictures with stars.
Bill needs 92 stars for his picture. He has 27.
How many more stars should he get?

14. Jim needs 53 stars for his picture.
He has 39 stars. He needs _____ more stars.

15. There are 100 stars in a full box.
Mary gave Bill 65 stars from the box.
How many stars were left in the box?

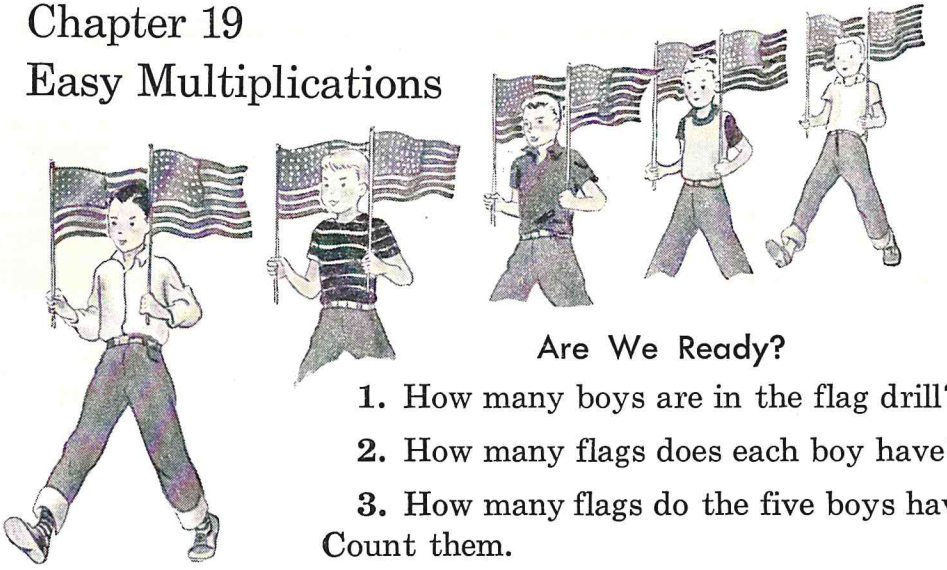
16. Mary has 35 stars.
Will she have enough to give Jane 27 stars
after she gives Jim the 14 stars that he wants?

17. Ann had a new box of 100 stars.
She used 36 stars for her picture.
How many stars did she have left?

18. Ann has 64 stars.
How many will she have left
after she gives Betty the 35 stars that she wants?

19. Jack had 90 stars before he used 50 of them.
How many stars did he have then?

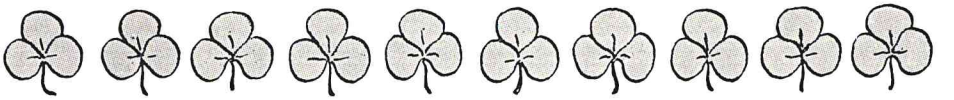
Chapter 19
Easy Multiplications



Are We Ready?

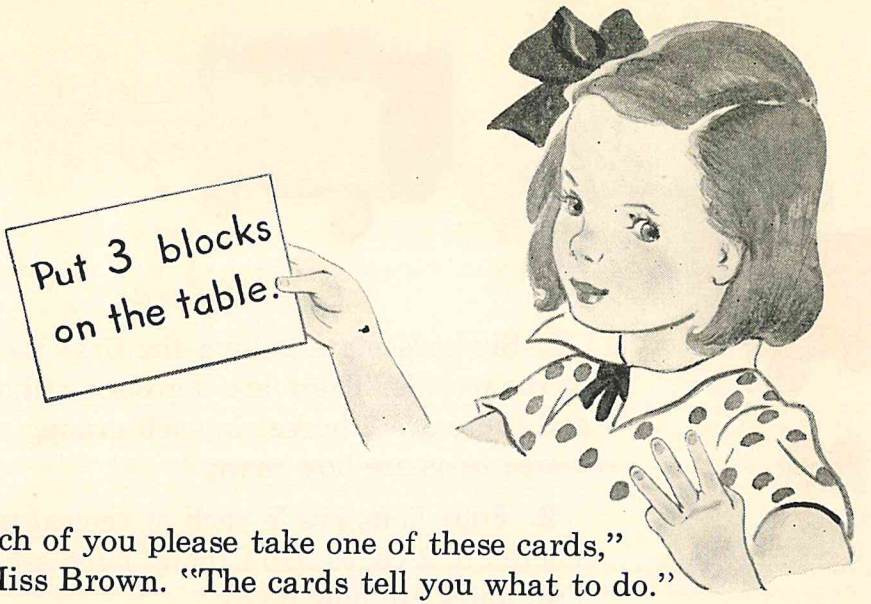
1. How many boys are in the flag drill?
2. How many flags does each boy have?
3. How many flags do the five boys have? Count them.
4. Count by twos to twenty.

5. Count by threes to thirty.



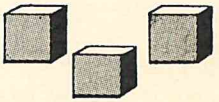
6. Count by fours to forty.

7. Count by fives to fifty.

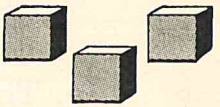


"Each of you please take one of these cards," said Miss Brown. "The cards tell you what to do."

Jane read her card. Betty read her card, and Tom and Jack read their cards, too.



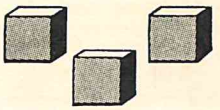
Jane put 3 blocks on the table.
Betty got 3 blocks and put them on the table.
Tom put 3 blocks on the table, and so did Jack.



"What do you see?" asked Miss Brown.

"I see 3 blocks and 3 blocks and 3 blocks and 3 blocks," said Betty.

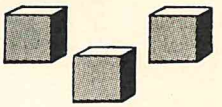
"Each of us put the same number of blocks on the table," said Tom.

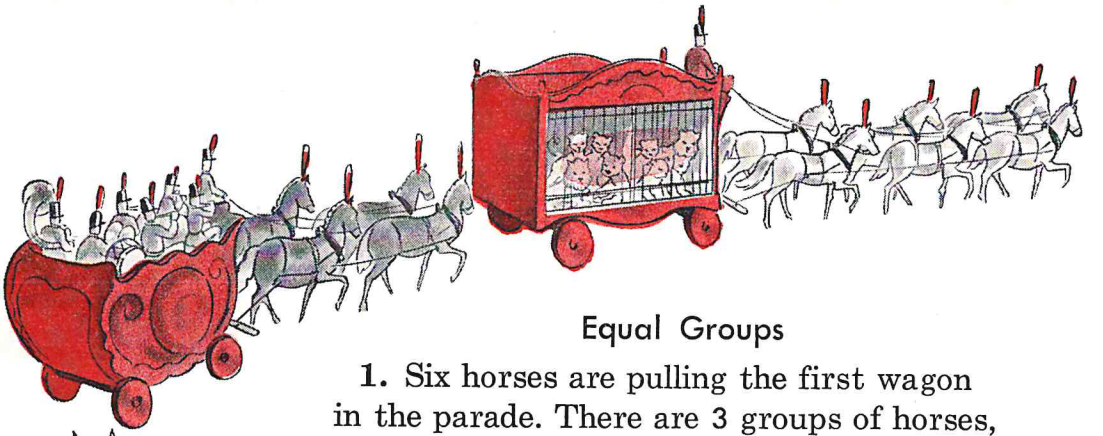


"I see **four threes**," said Betty.

"Now who will tell us how many four 3's are?" asked Miss Brown.

"Three, six, nine, twelve," said Jane. "**Four threes are twelve.**"





Equal Groups

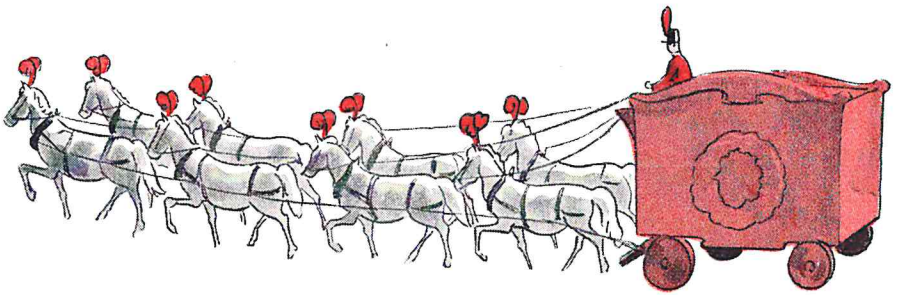
1. Six horses are pulling the first wagon in the parade. There are 3 groups of horses, and there are 2 horses in each group. Three twos are how many?

2. Four lions are in each of the cages. There are 2 cages. How many lions are there? Two fours are how many?

3. Two groups of horses are pulling the next wagon. There are 2 horses in each group. How many horses are pulling this wagon? Two twos are how many?

4. How many clowns are marching by twos? Six twos are how many?

5. The last wagon is being pulled by how many horses? There are 4 groups of horses with 2 horses in each group. Four twos are how many?



What Multiplication Means

How many blocks are in each group?
How many groups are there?

Count the blocks by **threes**: 3, 6, 9, 12, 15.
Five 3's are how many?
We say, "Five threes are fifteen."

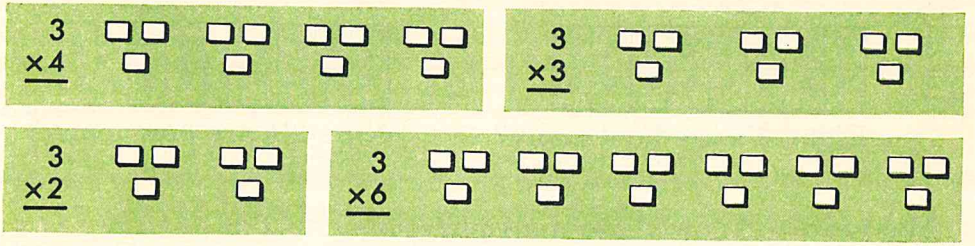
This is the way we write the question:
The figures ask: **Five 3's are how many**?
It is a **multiplication** question.
This sign (×) tells us to multiply.

When we find how many there are in a number of equal groups, we **multiply**.

This is the way we write the answer:
This is the way we read the answer:
Five threes are fifteen.

$$\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array} \qquad \begin{array}{r} 3 \\ \times 5 \\ \hline 15 \end{array}$$

Use blocks to find the answers to these questions:

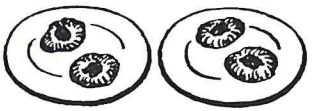


Study:

$$\begin{array}{r} 3 \\ \times 2 \\ \hline 6 \end{array} \qquad \begin{array}{r} 3 \\ \times 3 \\ \hline 9 \end{array} \qquad \begin{array}{r} 3 \\ \times 4 \\ \hline 12 \end{array} \qquad \begin{array}{r} 3 \\ \times 5 \\ \hline 15 \end{array} \qquad \begin{array}{r} 3 \\ \times 6 \\ \hline 18 \end{array}$$

Multiplications for Twos

Mary is helping to get the plates ready for lunch at school. She must put 2 cookies on each plate. How many cookies will she need for 2 plates?



Two 2's are how many?

★★ ★★

$$\begin{array}{r} 2 \\ \times 2 \\ \hline \end{array}$$

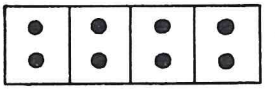
How many cookies will she need for 3 plates?

Three 2's are how many?

★★ ★★ ★★

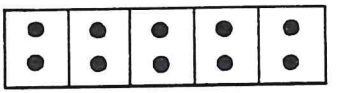
$$\begin{array}{r} 2 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 4 \\ \hline \end{array}$$



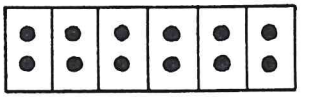
Four 2's are how many?

$$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$$



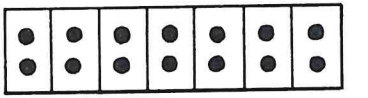
Five 2's are how many?

$$\begin{array}{r} 2 \\ \times 6 \\ \hline \end{array}$$



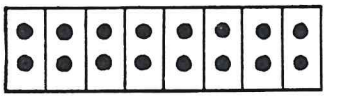
Six 2's are how many?

$$\begin{array}{r} 2 \\ \times 7 \\ \hline \end{array}$$



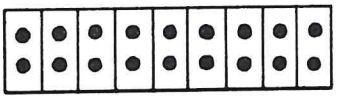
Seven 2's are how many?

$$\begin{array}{r} 2 \\ \times 8 \\ \hline \end{array}$$



Eight 2's are how many?

$$\begin{array}{r} 2 \\ \times 9 \\ \hline \end{array}$$



Nine 2's are how many?

You need to know these multiplications for 2's:

$$\begin{array}{r} 2 \\ \times 2 \\ \hline 4 \end{array} \quad \begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array} \quad \begin{array}{r} 2 \\ \times 4 \\ \hline 8 \end{array} \quad \begin{array}{r} 2 \\ \times 5 \\ \hline 10 \end{array} \quad \begin{array}{r} 2 \\ \times 6 \\ \hline 12 \end{array} \quad \begin{array}{r} 2 \\ \times 7 \\ \hline 14 \end{array} \quad \begin{array}{r} 2 \\ \times 8 \\ \hline 16 \end{array} \quad \begin{array}{r} 2 \\ \times 9 \\ \hline 18 \end{array}$$

Problems

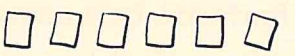
We will multiply to answer the question in each problem. Let us see why we multiply.

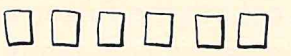
1. "Sue, will you give three pieces of paper to **each** child in this group?" asked Miss Brown. There were 4 children in the group. How many pieces of paper should Sue get?

Do you see that the question means:
How many are four threes?

$$\begin{array}{r} 3 \\ \times 4 \\ \hline \end{array}$$

2. Mary wants to make 2 art books. She needs 6 pieces of paper for each book. How many pieces of paper does she need?

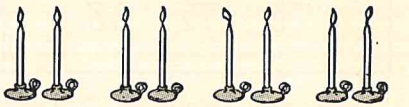
Mary needs  for .

and  for .

$$\begin{array}{r} 6 \\ \times 2 \\ \hline \end{array}$$

What does the question mean?

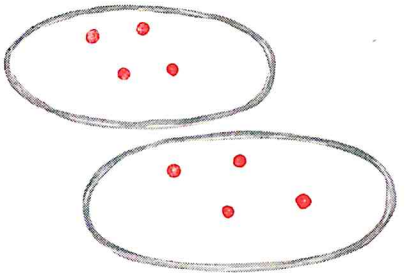
3. Jane wants to put 2 candles in each window of the living room. There are 4 windows in the room. How many candles will she need?
Four twos are how many?

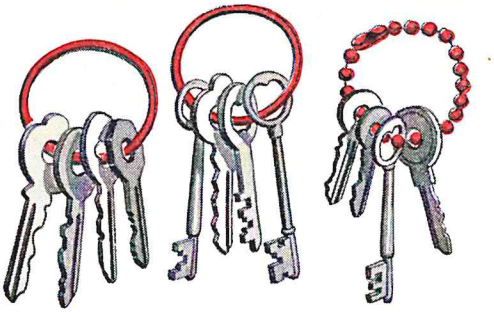


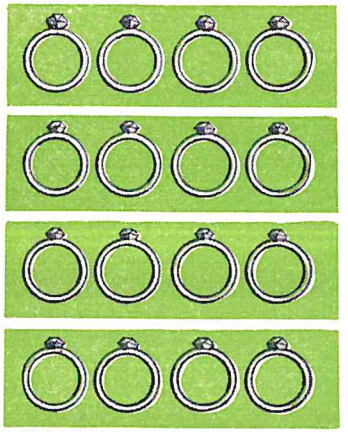
4. Jim wants to buy five marbles. Each marble costs 2 cents. How much will five marbles cost?

The marbles will cost 2¢, 2¢, 2¢, 2¢, and 2¢. So we must answer this question:
Five twos are how many?

$$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$$







Rings

1. Find the rings with marbles in them.
How many marbles are there in each ring?
How many rings are there?
Two fours are how many?

2. Find the rings with keys on them.
How many keys are there on each ring?
How many key rings are there?
Three fours are how many?

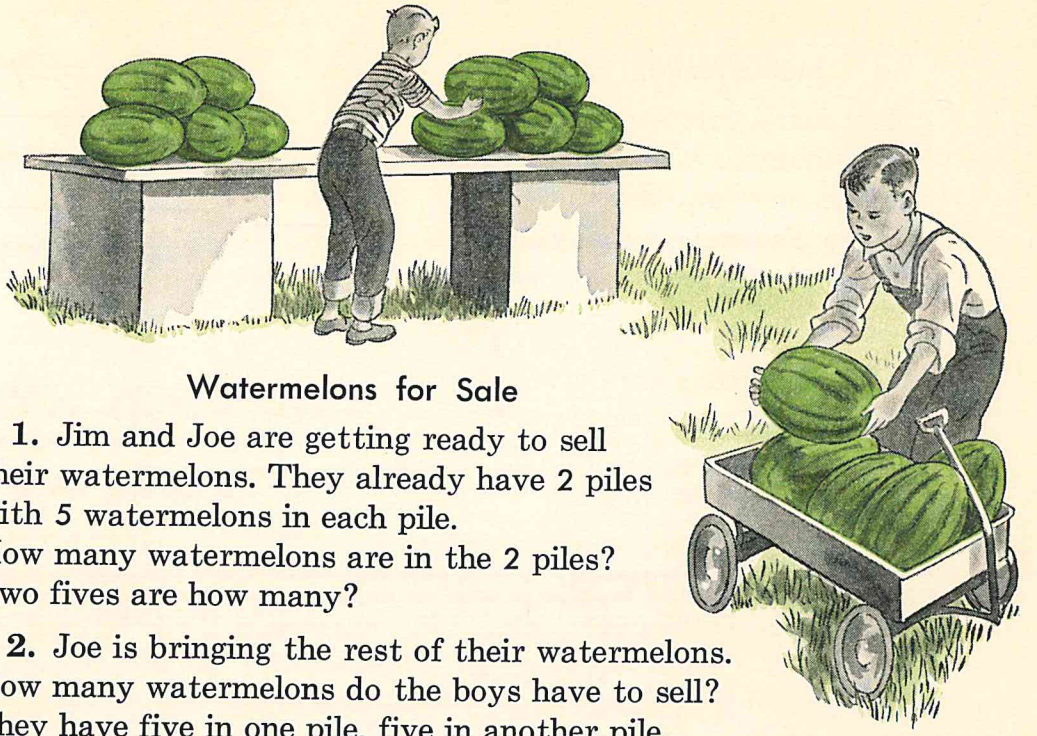
3. Look at the finger rings.
Four fours are how many?

Study:	Tell the answers:
$\begin{array}{r} 4 \\ \times 2 \\ \hline 8 \end{array}$ $\begin{array}{r} 4 \\ \times 3 \\ \hline 12 \end{array}$ $\begin{array}{r} 4 \\ \times 4 \\ \hline 16 \end{array}$	$\begin{array}{r} 4 \\ \times 3 \end{array}$ $\begin{array}{r} 4 \\ \times 2 \end{array}$ $\begin{array}{r} 4 \\ \times 4 \end{array}$ $\begin{array}{r} 4 \\ \times 3 \end{array}$ $\begin{array}{r} 4 \\ \times 4 \end{array}$

Say the answers to these multiplication questions:

4. $\begin{array}{r} 3 \\ \times 4 \end{array}$ $\begin{array}{r} 2 \\ \times 5 \end{array}$ $\begin{array}{r} 3 \\ \times 3 \end{array}$ $\begin{array}{r} 2 \\ \times 8 \end{array}$ $\begin{array}{r} 3 \\ \times 5 \end{array}$ $\begin{array}{r} 4 \\ \times 4 \end{array}$ $\begin{array}{r} 3 \\ \times 6 \end{array}$ $\begin{array}{r} 2 \\ \times 9 \end{array}$

5. $\begin{array}{r} 2 \\ \times 3 \end{array}$ $\begin{array}{r} 4 \\ \times 3 \end{array}$ $\begin{array}{r} 2 \\ \times 2 \end{array}$ $\begin{array}{r} 3 \\ \times 2 \end{array}$ $\begin{array}{r} 2 \\ \times 6 \end{array}$ $\begin{array}{r} 4 \\ \times 2 \end{array}$ $\begin{array}{r} 2 \\ \times 4 \end{array}$ $\begin{array}{r} 2 \\ \times 7 \end{array}$



Watermelons for Sale

1. Jim and Joe are getting ready to sell their watermelons. They already have 2 piles with 5 watermelons in each pile.
How many watermelons are in the 2 piles?
Two fives are how many?

2. Joe is bringing the rest of their watermelons. How many watermelons do the boys have to sell? They have five in one pile, five in another pile, and five in the wagon. They have three fives.
Three fives are how many?

Study:	Tell the answers:
$\begin{array}{r} 5 \\ \times 2 \\ \hline 10 \end{array}$ $\begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array}$	$\begin{array}{r} 4 \\ \times 3 \end{array}$ $\begin{array}{r} 5 \\ \times 3 \end{array}$ $\begin{array}{r} 5 \\ \times 2 \end{array}$ $\begin{array}{r} 5 \\ \times 3 \end{array}$ $\begin{array}{r} 5 \\ \times 2 \end{array}$ $\begin{array}{r} 4 \\ \times 4 \end{array}$

Say the answers:

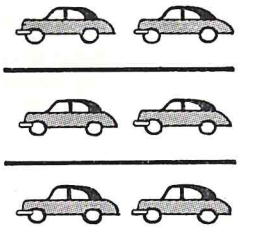
3. $\begin{array}{r} 2 \\ \times 4 \end{array}$ $\begin{array}{r} 3 \\ \times 3 \end{array}$ $\begin{array}{r} 4 \\ \times 3 \end{array}$ $\begin{array}{r} 5 \\ \times 2 \end{array}$ $\begin{array}{r} 4 \\ \times 2 \end{array}$ $\begin{array}{r} 4 \\ \times 4 \end{array}$ $\begin{array}{r} 3 \\ \times 4 \end{array}$ $\begin{array}{r} 3 \\ \times 2 \end{array}$

4. $\begin{array}{r} 3 \\ \times 5 \end{array}$ $\begin{array}{r} 2 \\ \times 5 \end{array}$ $\begin{array}{r} 3 \\ \times 6 \end{array}$ $\begin{array}{r} 2 \\ \times 3 \end{array}$ $\begin{array}{r} 2 \\ \times 9 \end{array}$ $\begin{array}{r} 2 \\ \times 2 \end{array}$ $\begin{array}{r} 2 \\ \times 8 \end{array}$ $\begin{array}{r} 5 \\ \times 3 \end{array}$

Multiplication Pairs

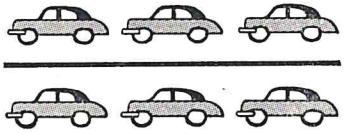
How many cars are there in all?
How many cars are in each row?
How many rows are there?
Three 2's are how many?
Three 2's are six.

$$\begin{array}{r} 2 \\ \times\ 3 \\ \hline \end{array}$$



How many cars are here?
How many are in each row?
How many rows are there?
Two 3's are how many?

$$\begin{array}{r} 3 \\ \times\ 2 \\ \hline \end{array}$$

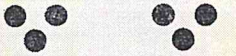


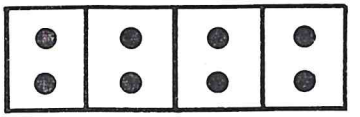
Most multiplications go in pairs.
If you know one of them, you also know the other.

If you know $\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array}$, you know $\begin{array}{r} 3 \\ \times 2. \\ \hline 6 \end{array}$

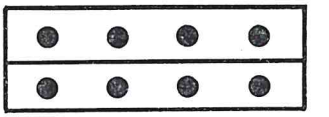
Three 2's are 6.

Two 3's are 6.

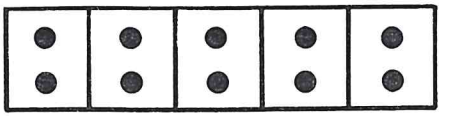




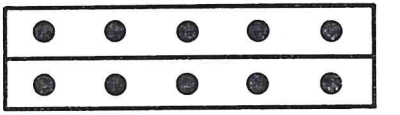
$$\begin{array}{r} 2 \\ \times 4 \\ \hline \end{array}$$ Four 2's are how many?



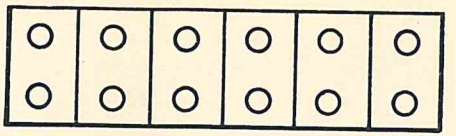
$$\begin{array}{r} 4 \\ \times 2 \\ \hline \end{array}$$ Two 4's are how many?



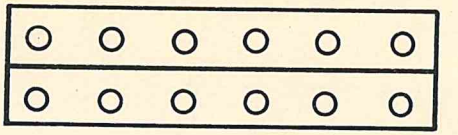
$$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$$ Five 2's are how many?



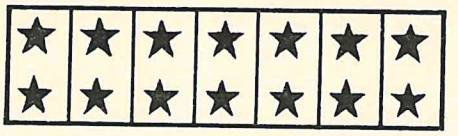
$$\begin{array}{r} 5 \\ \times 2 \\ \hline \end{array}$$ Two 5's are how many?



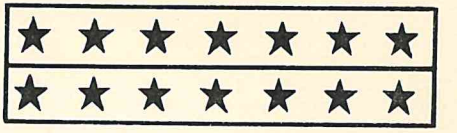
$\underline{\times 6}^{2}$ Six 2's are how many?



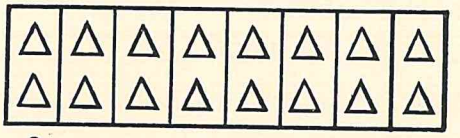
$\underline{\times 2}^{6}$ Two 6's are how many?



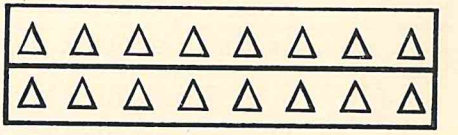
$\underline{\times 7}^{2}$ Seven 2's are how many?



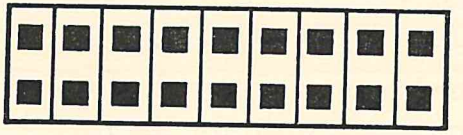
$\underline{\times 2}^{7}$ Two 7's are how many?



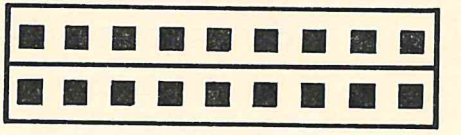
$\underline{\times 8}^{2}$ Eight 2's are how many?



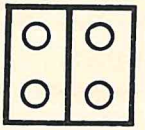
$\underline{\times 2}^{8}$ Two 8's are how many?

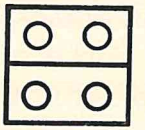


$\underline{\times 9}^{2}$ Nine 2's are how many?



$\underline{\times 2}^{9}$ Two 9's are how many?

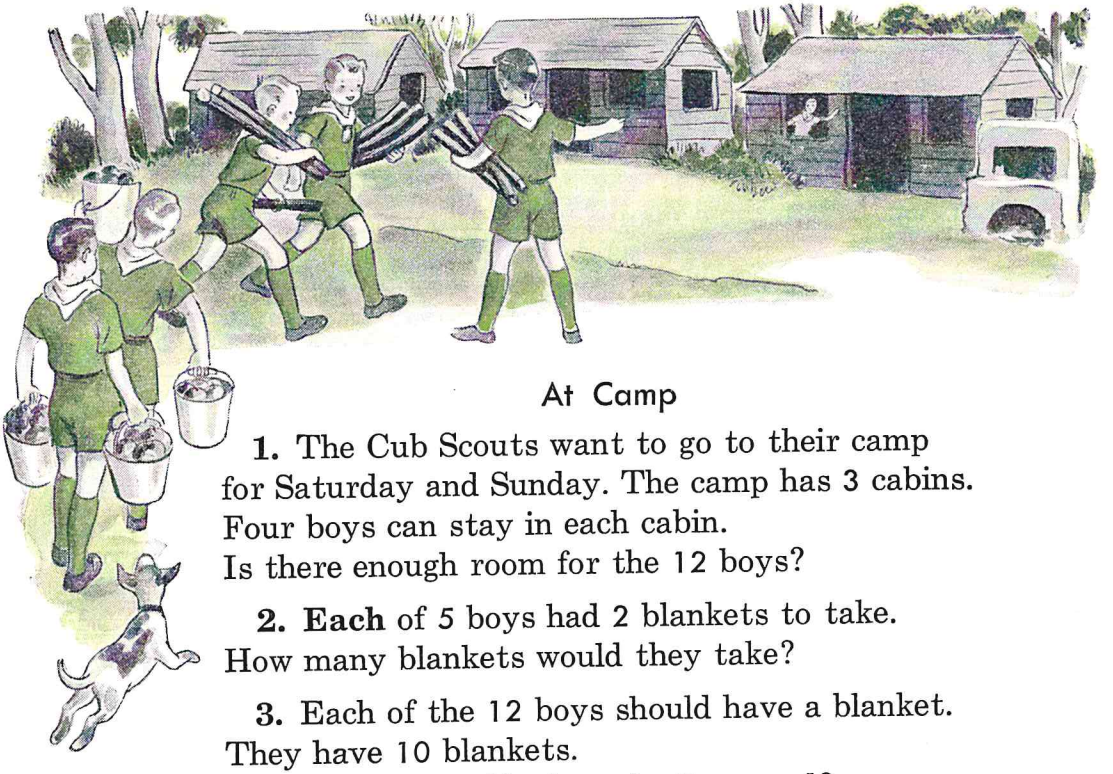




Look at the dot picture of $\underline{\times 2}^{2}$.
Is there a pair of multiplications?

Here are the multiplications for 2:

2	3	4	5	6	7	8	9
×2	×2	×2	×2	×2	×2	×2	×2
4	6	8	10	12	14	16	18



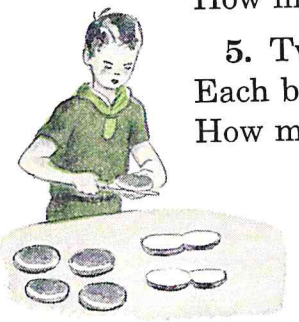
At Camp

1. The Cub Scouts want to go to their camp for Saturday and Sunday. The camp has 3 cabins. Four boys can stay in each cabin.
Is there enough room for the 12 boys?

2. Each of 5 boys had 2 blankets to take.
How many blankets would they take?

3. Each of the 12 boys should have a blanket. They have 10 blankets.
How many more blankets do they need?

4. When they reached camp, the boys had to work. Three of the boys went to get wood for the fire. Each boy carried 3 big sticks of wood.
How many sticks did they carry in all?



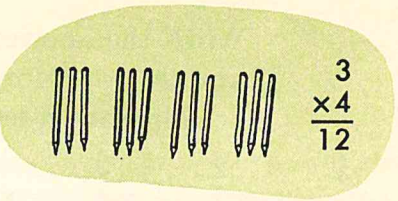
5. Two boys went to get apples from Mr. Smith. Each boy brought back 2 buckets of apples.
How many buckets of apples did they bring?

6. Three boys got 2 bottles of milk apiece.
How many bottles of milk did they get?

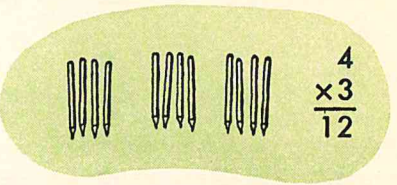
7. Two boys cut 7 buns apiece.
How many buns did they cut?

Other Multiplication Pairs

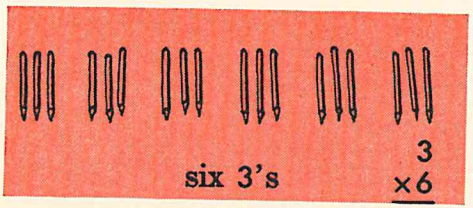
Tom put 12 pencils on the table.
He put them in 4 groups
with 3 pencils in each group.
The pencils show that four 3's are 12.

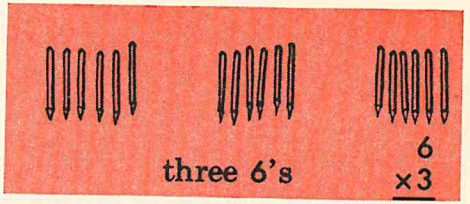


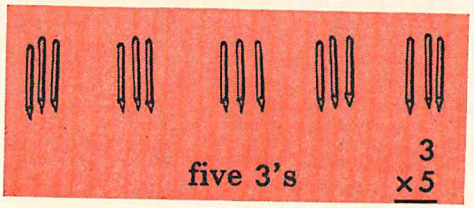
Joe put 12 pencils on the table.
He put them in 3 groups
with 4 pencils in each group.
His pencils show that three 4's are 12.



Look at the picture in each box.
Then answer the multiplication question in that box.







Read each multiplication below.
Then say the answer to the question beside it.

3 ×4 = 12	4 ×3	3 ×5 = 15	5 ×3	3 ×6 = 18	6 ×3	2 ×4 = 8	4 ×2	3 ×2 = 6	2 ×3
2 ×5 = 10	5 ×2	2 ×6 = 12	6 ×2	2 ×7 = 14	7 ×2	2 ×8 = 16	8 ×2	2 ×9 = 18	9 ×2

Do You Know? [Self-test]

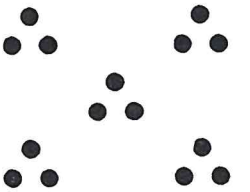
Write the answers to these multiplication questions.
If you do not know an answer, do not guess.
Just skip that question and go on to the next.

1.	2 ×2	3 ×4	2 ×5	3 ×2	2 ×6	5 ×2	4 ×2	5 ×3
2.	7 ×2	2 ×3	3 ×5	6 ×2	2 ×4	4 ×3	3 ×6	9 ×2
3.	2 ×8	5 ×3	3 ×3	6 ×3	2 ×9	8 ×2	2 ×7	4 ×4

Let us use this question to learn how to find an answer that we did not know. It asks: **Five threes are how many?**

$$\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$$

We make a picture of five threes with dots.
Then we count the dots:
Three, six, nine, twelve, fifteen.
Five threes are fifteen.
We write the multiplication.



$$\begin{array}{r} 3 \\ \times 5 \\ \hline 15 \end{array}$$

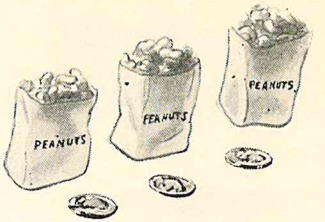
Now we study that multiplication.
We say again and again, "Five threes are fifteen."

Find the answer to each multiplication question that you did not know. Then learn it.

Now say the answers to these questions:

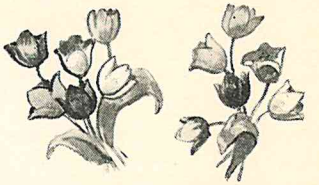
6 ×3	3 ×4	5 ×3	2 ×4	3 ×6	4 ×3	3 ×3	7 ×2	2 ×9	4 ×4

Problems



1. Jack bought 3 bags of peanuts.
They cost 5 cents a bag.
How much did he pay for the peanuts?

2. Bill wrote 4 letters.
He put a 3-cent stamp on each letter.
How much did it cost to send the letters?

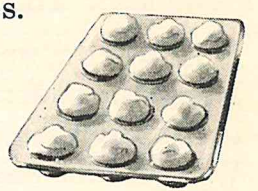


3. Bob wanted to take 6 tulips
to each of his 3 teachers.
How many tulips should he pick?

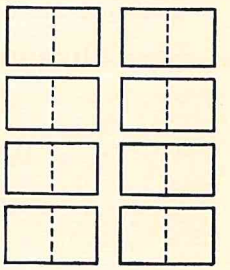
4. There are 6 small blackboards in our room.
Two children can work at each blackboard.
How many children can work at the board at a time?

5. The fourth-grade pupils came to our room
to sing. They stood in 2 rows with 7 in each row.
How many children came to our room to sing?

6. Mary needs 4 buttons for each of 2 dresses.
How many buttons does she need?



7. Mrs. East's cake pan makes 4 rows
of cakes with 3 cakes in each row.
How many cakes can she make in her pan
at a time?

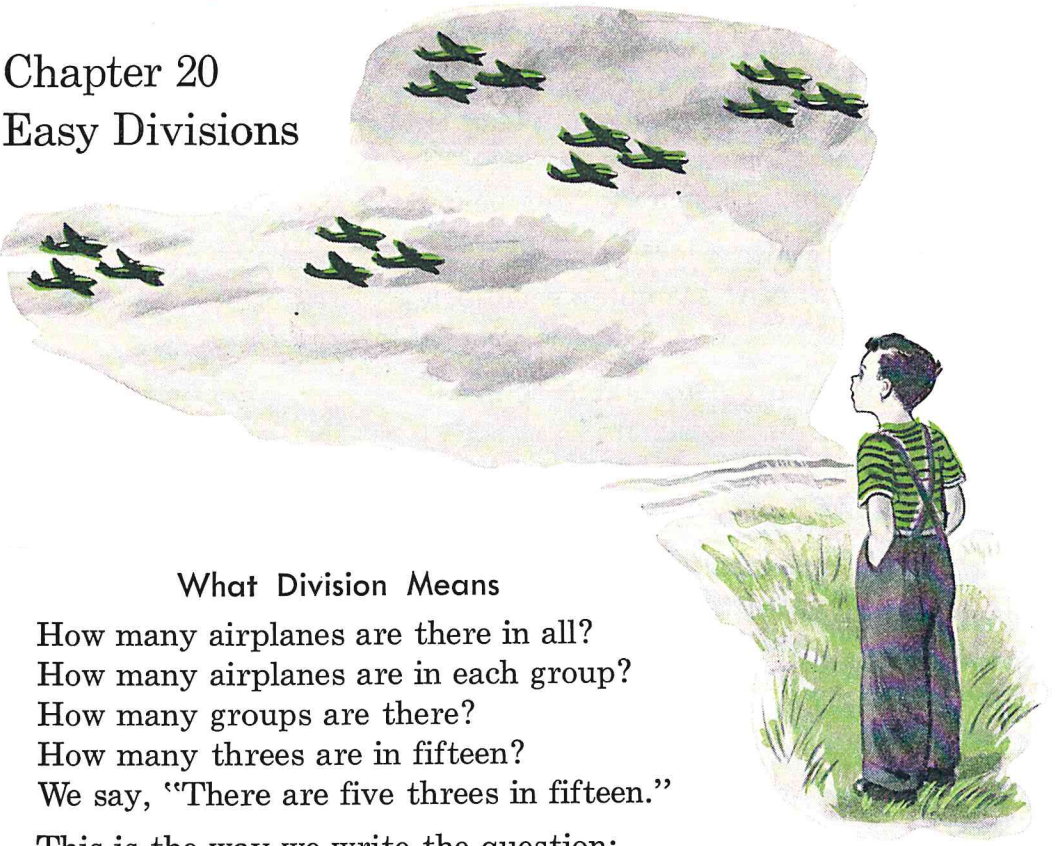


8. Jack can carry 2 chairs at a time.
How many chairs can he carry in 4 trips?

9. Alice tears 8 sheets of paper in two.
Then how many pieces of paper does she have?

10. Robert bought six 3-cent stamps.
How much should he pay for the stamps?

Chapter 20
Easy Divisions



What Division Means

How many airplanes are there in all?
How many airplanes are in each group?
How many groups are there?
How many threes are in fifteen?
We say, "There are five threes in fifteen."

This is the way we write the question:
The figures ask: **How many 3's are in 15?**
It is a **division** question.
We write the answer like this:
We read the division like this:

Threes in fifteen, five.

Five threes are fifteen.

$$3\overline{)15}$$

$$\begin{array}{r} 5 \\ 3\overline{)15} \\ \underline{15} \end{array}$$

When we find how many equal groups there are in a number of things, we **divide**.

Discovering Divisions

Miss Brown asked Dick to put 12 blocks in a row on the table.

"Now let us arrange the twelve blocks in groups of three," said Miss Brown.

"We have four groups," said Dick.
"There are three blocks in each group."

"We have found how many threes are in twelve," said Miss Brown. "How many threes are in twelve?"

We find that there are four threes in twelve.
We say, "Threes in twelve, four.
Four threes are twelve."

$$3\overline{)12}\quad 4,\ 12$$

Use blocks to answer these questions:

a. Get 9 blocks. How many threes are in nine?
b. Get 6 blocks. How many threes are in six?
c. Get 15 blocks. How many threes are in fifteen?

How many threes are in eighteen?
Here is the way Joe found the answer:

$$3\overline{)18}\quad 6,\ 18$$

Study:

$$3\overline{)9}\quad 3,\ 9 \qquad 3\overline{)6}\quad 2,\ 6 \qquad 3\overline{)12}\quad 4,\ 12 \qquad 3\overline{)15}\quad 5,\ 15 \qquad 3\overline{)18}\quad 6,\ 18$$

Making Groups of Two

The girls are making chains with daisies for the program on the last day of school.

"Let us tie two daisies together," said Betty. "I have four daisies here, and you have six."

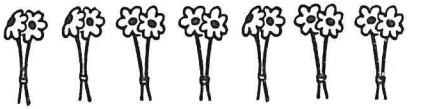
How many groups can Betty make with 4 daisies?

How many groups can Jane make with 6 daisies?

How many 2's are in 4? $2\overline{)4}$

How many 2's are in 6? $2\overline{)6}$

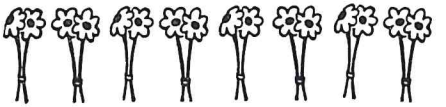
How many 2's are in 10? $2\overline{)10}$



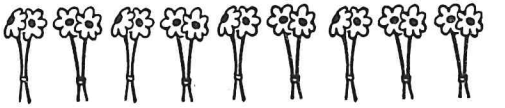
How many 2's are in 14? $2\overline{)14}$

How many 2's are in 12? $2\overline{)12}$

How many 2's are in 8? $2\overline{)8}$



How many 2's are in 16? $2\overline{)16}$



How many 2's are in 18? $2\overline{)18}$

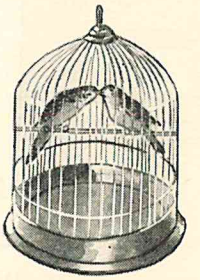
$$\begin{array}{r} 2 \\ 2\overline{)4} \\ \underline{4} \end{array} \quad \begin{array}{r} 3 \\ 2\overline{)6} \\ \underline{6} \end{array} \quad \begin{array}{r} 4 \\ 2\overline{)8} \\ \underline{8} \end{array} \quad \begin{array}{r} 5 \\ 2\overline{)10} \\ \underline{10} \end{array} \quad \begin{array}{r} 6 \\ 2\overline{)12} \\ \underline{12} \end{array} \quad \begin{array}{r} 7 \\ 2\overline{)14} \\ \underline{14} \end{array} \quad \begin{array}{r} 8 \\ 2\overline{)16} \\ \underline{16} \end{array} \quad \begin{array}{r} 9 \\ 2\overline{)18} \\ \underline{18} \end{array}$$

Problems

1. Jack gives 2 carrots to each of his rabbits.
How many rabbits can he feed with 12 carrots?
How many twos are there in twelve?

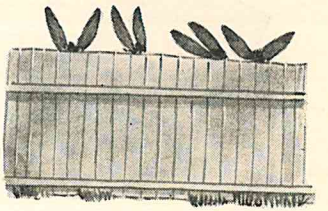
2. Jane found 6 red feathers.
She put 2 feathers on each of her doll's hats.
She had enough feathers for how many hats?
How many twos are there in six?

3. Alice has 10 dolls.
If she puts 2 dolls in a bed, how many beds will she need for her dolls?



4. The man at the pet store has 18 lovebirds.
He keeps 2 birds in each cage.
How many cages are the birds in?
How many twos are there in eighteen?

5. Joe keeps his 16 crayons in 2 boxes.
He keeps the same number in each box.
How many crayons does he keep in each box?



6. "Look!" said Joe. "How many mules do you think are back of the fence?"

7. Mrs. West sent 14 socks to be washed.
How many pairs of socks did she send?
Two things that belong together are a **pair.**

8. Jim sells apples for 2 cents each.
Mary has 10 cents.
How many apples can she buy with her dime?

9. Say the answers:

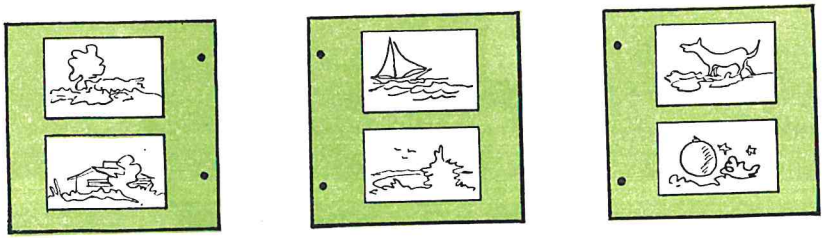
$2\overline{)12}$ $2\overline{)6}$ $2\overline{)10}$ $2\overline{)18}$ $2\overline{)16}$ $2\overline{)14}$ $2\overline{)8}$ $2\overline{)4}$

Division Pairs

Sue and Ann have six pictures apiece.
They are putting the pictures in their scrapbooks.

"My pictures are big," said Sue.
"I can put only two pictures on a page."

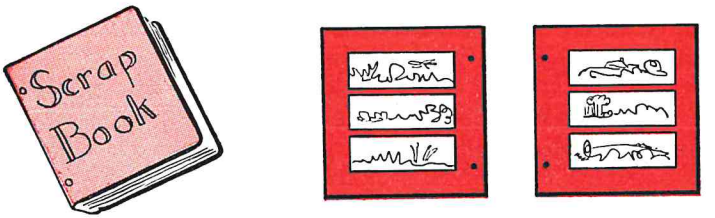
How many pages will Sue need for her 6 pictures?
How many twos are in six?



$$2\overline{)6}\quad 3\quad 6$$

"I can put three pictures on a page," said Ann.

How many pages will Ann need for her 6 pictures?
How many threes are in six?



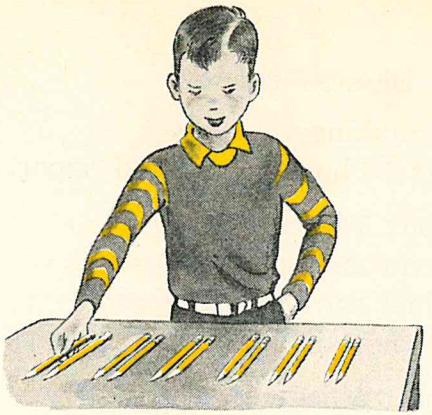
$$3\overline{)6}\quad 2\quad 6$$

There are three 2's in six. There are two 3's in six.

$2\overline{)6}\ 3\ 6$ $3\overline{)6}\ 2\ 6$

Most divisions go in pairs.
If you know one, you should know the other.

If you know $2\overline{)6}\ 3\ 6$, you should know $3\overline{)6}\ 2\ 6$.



Use sticks to find how many 2's are in 12.
Then use the sticks to find how many 6's are in 12.
How many 2's are in 12? How many 6's are in 12?

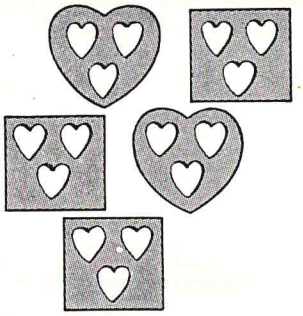
Now use 10 sticks.
Find how many 2's there are in 10.
Then find how many 5's there are in 10.
How many 2's are in 10? How many 5's are in 10?

Find and write the answer to each question:

How many 2's are in 14?	How many 7's are in 14?
How many 2's are in 16?	How many 8's are in 16?
How many 2's are in 18?	How many 9's are in 18?
How many 2's are in 8?	How many 4's are in 8?

Read each division below.
Then say the answer to the question beside it.

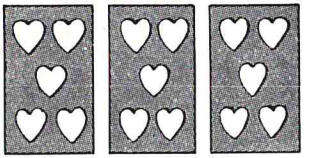
$$\begin{array}{llllllll} \begin{array}{r}3\\2\overline{)6}\\\underline{6}\end{array} & 3\overline{)6} & \begin{array}{r}4\\2\overline{)8}\\\underline{8}\end{array} & 4\overline{)8} & \begin{array}{r}5\\2\overline{)10}\\\underline{10}\end{array} & 5\overline{)10} & \begin{array}{r}6\\2\overline{)12}\\\underline{12}\end{array} & 6\overline{)12} \\ \begin{array}{r}7\\2\overline{)14}\\\underline{14}\end{array} & 7\overline{)14} & \begin{array}{r}8\\2\overline{)16}\\\underline{16}\end{array} & 8\overline{)16} & \begin{array}{r}9\\2\overline{)18}\\\underline{18}\end{array} & 9\overline{)18} & \begin{array}{r}2\\5\overline{)10}\\\underline{10}\end{array} & 2\overline{)10} \end{array}$$



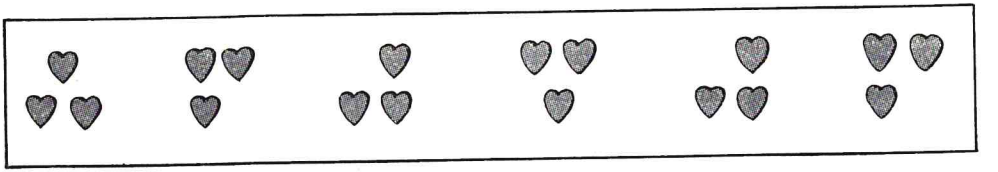
More Division Pairs

Jim and Sue are making valentines.
They have each cut 15 hearts from red paper.

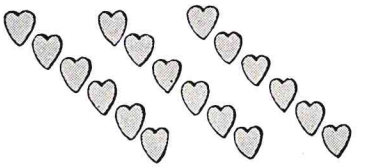
Sue is going to put 3 hearts
on each of her valentines.
How many valentines can she make?
How many 3's are there in 15? $3\overline{)15}$



Jim is going to put 5 hearts
on each of his valentines.
How many valentines can he make?
How many 5's are there in 15? $5\overline{)15}$



How many hearts are in the picture above?
How many equal groups are there?
How many 3's are in 18? $3\overline{)18}$ $6\overline{)18}$



If there are six 3's in 18, how many 6's are there in 18?

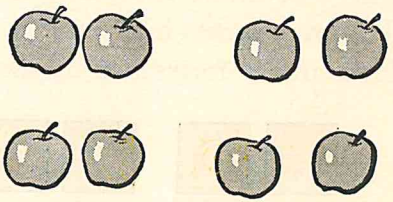
Say the answers to these division questions:

$2\overline{)16}$	$2\overline{)18}$	$3\overline{)12}$	$9\overline{)18}$	$5\overline{)15}$	$2\overline{)10}$	$5\overline{)10}$
$3\overline{)18}$	$2\overline{)14}$	$7\overline{)14}$	$6\overline{)18}$	$6\overline{)12}$	$8\overline{)16}$	$2\overline{)12}$

Problems

In these problems we **divide** to find the answers to the questions. Let us find out why we divide.

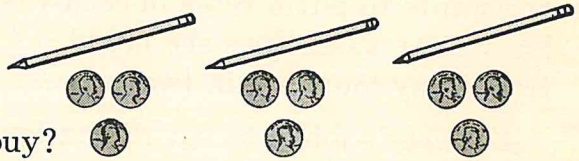
1. Jack took 8 apples to give to the boys on the playground. How many boys will get apples if he gives 2 apples to each boy?



Jack had 8 apples.
He wants to give 2 apples to each boy.
The question asks: **How many boys will get apples?**
To answer this question, we must find how many 2's there are in 8. To do this, we divide 8 by 2. $2\overline{)8}$

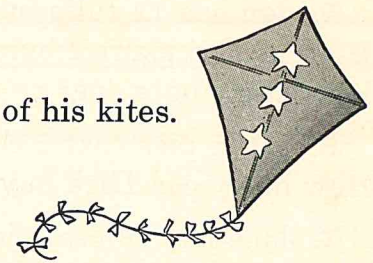
2. Jane has 6 cookies.
To how many girls can she give 3 cookies? $3\overline{)6}$
The question means: **How many 3's are in 6?**

3. Ann has 9 cents.
She wants to buy pencils.
Each pencil costs 3 cents.
How many pencils can she buy?



4. Bill wants to buy some marbles that cost 5¢ each.
He has 10 cents.
How many marbles can he buy?

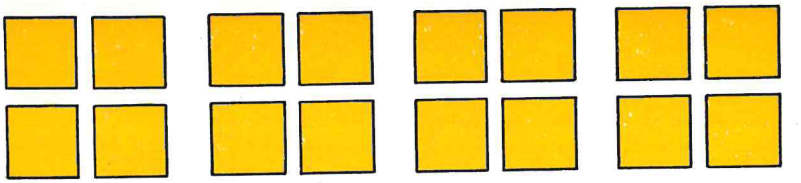
5. Jack wants to put 3 stars on each of his kites.
He has 12 stars.
On how many kites can he put stars?



6. Jim has 15 cents.
Ice-cream cones cost 5 cents each.
Can Jim buy a cone for Jane, Joe, and himself?

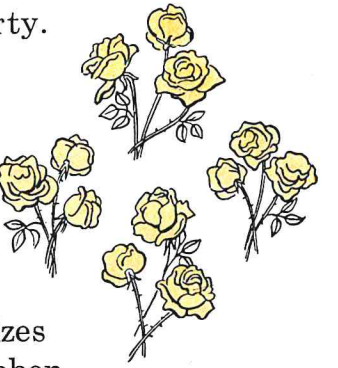
Problems

1. Miss Brown asked Mary to give 4 pieces of yellow paper to each child.
Mary counted the pieces of paper. There were 16.
To how many children can she give yellow paper?
How many fours are in sixteen?



$4\overline{)16}$

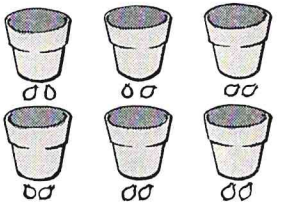
2. Alice cut 12 roses for her mother's party.
She wants to put 3 roses in each vase.
How many vases does she need?



3. Mary cut 12 roses, too.
She wants to put 4 roses in each vase.
How many vases does she need?
How many fours are in twelve?

4. Betty's job is to cut ribbon for the prizes for the flower show. She has 12 inches of ribbon.
How many 4-inch pieces of ribbon can she cut?

5. Jim has 12 tulip bulbs.
He wants to plant 2 bulbs in each pot.
How many pots does he need?



6. Little pies cost 8 cents apiece.
How many can Dick buy for 16 cents?

7. Jane put 18 cents in her bank in 3 weeks.
She put in the same number of cents each week.
How many cents did she put in her bank each week?

Do You Know? [Self-test]

Copy each division question. Then write the answer.

1.	$2\overline{)6}$	$2\overline{)10}$	$3\overline{)12}$	$2\overline{)16}$	$3\overline{)15}$	$2\overline{)14}$	$5\overline{)15}$
2.	$3\overline{)6}$	$2\overline{)18}$	$2\overline{)12}$	$3\overline{)18}$	$6\overline{)18}$	$4\overline{)12}$	$4\overline{)16}$
3.	$2\overline{)8}$	$3\overline{)9}$	$4\overline{)8}$	$7\overline{)14}$	$6\overline{)12}$	$5\overline{)10}$	$8\overline{)16}$

Now we will learn to find the answers that we did not know. We can use this question: The question asks: **How many 3's are in 18?** We make 18 dots on our paper.

$3\overline{)18}$

We want to find how many 3's are in 18; so we draw lines to make groups of 3 dots.

Then we count the groups and write the answer.

$$\begin{array}{r} 6 \\ 3\overline{)18} \\ \underline{18} \end{array}$$

Now we must learn the division. So we say again and again:

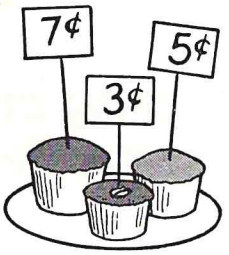
"Threes in eighteen, six.
Six threes are eighteen."

Find the answer to each division question that you did not know. Then learn it.

Say the answers:

4.	$3\overline{)9}$	$2\overline{)16}$	$3\overline{)18}$	$2\overline{)10}$	$3\overline{)12}$	$9\overline{)18}$	$3\overline{)15}$
5.	$4\overline{)16}$	$2\overline{)14}$	$2\overline{)18}$	$5\overline{)15}$	$5\overline{)10}$	$6\overline{)18}$	$4\overline{)12}$

Problems



You may have to add, subtract, multiply, or divide to answer the questions in these problems. Read each problem carefully. If you need help, draw a picture of what the problem tells you.

1. Mary bought 3 cupcakes that cost 5¢ each.
How much should she pay for them?

2. Jane bought 3 cupcakes. One of them cost 3¢, another cost 5¢, and still another cost 7¢.
How much should Jane pay for her cupcakes?

3. Jim bought a book that cost $.69.
He gave the clerk a dollar bill.
How much change should Jim get?
What coins might Jim get for change?
Count his change.

4. Jack has 8 cents.
He wants to buy some marbles that cost 4¢ each.
How many marbles can he buy?

5. There are 13 girls and 17 boys in the bus going to the zoo.
How many children are going to the zoo in the bus?

6. Mrs. East bought 12 oranges.
Her family eats 3 oranges each day for breakfast.
The oranges will last how many days?

lollipop

7. A big lollipop costs 2 cents.
How much should Sue pay for 9 lollipops?

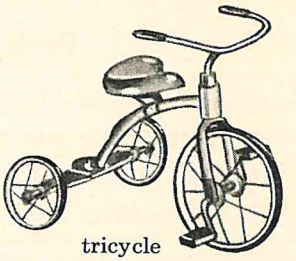
8. How much will three 5-cent stamps cost?
How much will five 3-cent stamps cost?

9. Two shoes make a pair.
How many shoes are in 3 pairs?

10. There are 3 rows of seats in the room.
There are 5 seats in each row.
How many seats are in the room?

11. Jack had $8. How much more does he need to buy a jacket that costs $10?

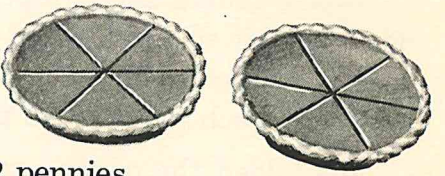
12. A tricycle has 3 wheels.
How many wheels are on 3 tricycles?



tricycle

13. Mrs. White has 2 pies.
She cut each pie into 6 pieces.
How many pieces did she have?

14. Joe has 65 cents.
He has 5 dimes and some nickels.
How many nickels does he have?
Draw a picture of the coins.



15. Jim has 4 dimes, 1 nickel, and 2 pennies.
How much money does he need to buy a 50-cent toy?

16. Alice has 65 cents in her bank.
Today she put 38 cents in her bank.
How much money has she in her bank now?

65¢	$ .65
38¢	.38
103¢	$1.03

17. Tom is 53 inches tall. Jim is 48 inches tall.
How much shorter is Jim than Tom?

18. Alice saved 84 cents last month and 45 cents this month.
How much has she saved in the two months?

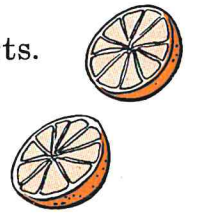
84¢	$ .84
45¢	.45
¢	$.

19. Jim has 1 dollar, and Jane has 75 cents.
How much more money has Jim than Jane?

Chapter 21
Equal Parts

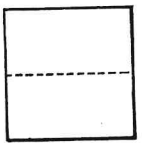
Parts of Things

1. Mrs. Hill cut an orange into 2 parts.
The parts are the same size.
Each part is **one half** of the orange.
We write **one half** like this:

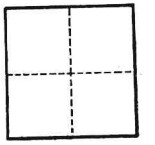


$\frac{1}{2}$

2. Jane took a sheet of paper.
She folded it so the bottom edge
and the top edge were together.
What did each part of the paper show?

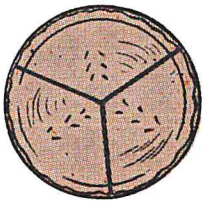


Jane folded the paper again.
This time she folded the left edge
and the right edge together.
When she opened the paper,
it showed 4 parts—all the same size.
Each part was **one fourth** of the paper.
We write **one fourth** like this:



$\frac{1}{4}$

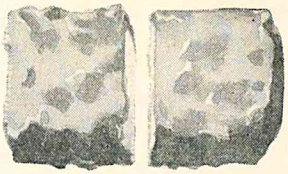
3. Mary and Sue stopped at Ann's house.
Ann's mother gave the girls a little pie.
Ann cut the pie into 3 pieces.
The pieces were the same size.
Each piece was **one third** of the pie.
We write **one third** like this:



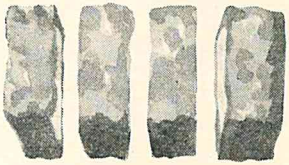
$\frac{1}{3}$

Equal Parts Are Fractions

1. Some candy bars have a deep line that divides them into two equal parts. How much of the bar is each part?

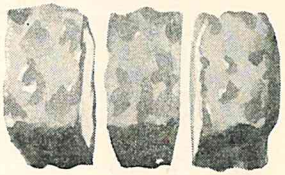


2. Other bars are divided by lines into four equal parts.
How much of the bar is each part?

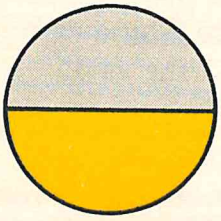


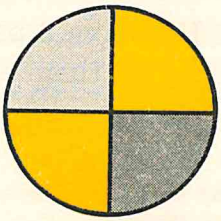
3. Still other bars are divided into three equal parts.
What is each part called?

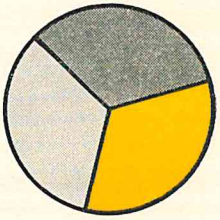
4. These bars are the same size.
Which part would you rather have?



5. Here are 3 circles of the same size. Each circle is divided into equal parts.
Which circle shows halves?
Which circle shows thirds?
Which circle shows fourths?







6. Which circle has the smallest parts?
Which circle has the most parts?

Parts that are the same size are **equal parts.**
Equal parts of things are called **fractions.**
We write $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$ to show the fractions.

Half of a Group

"Here are six cookies, Jim," said Mrs. West.
"You may give **half** of them to Joe."

Jim picked up one cookie for Joe
and one cookie for himself.
Then he picked up another cookie for Joe
and another cookie for himself.
He gave Joe one more cookie
and took one more for himself.

"We each get three cookies," said Jim.
"Half means that there are two equal parts.
So to get one half of the cookies,
we should each get the same number of cookies."

1. Take 8 blocks. Show one half of them.

2. Get 4 sticks. Show one half of them.

3. Draw 12 cookies. Now draw a ring
around one half of the cookies.

4. Mrs. Hill gave 8 pennies to Ann and Bill.
"You may divide them equally," she said.
How many pennies did each child get?

Bill's half

Ann's half

hangar

5. Jack has 12 airplanes to put into 3 hangars.
He put the same number of airplanes into each hangar.
He put one third of the airplanes into each hangar.
How many airplanes did he put into each hangar?

6. Jack and Jane bought 12 colored pencils.
They divided the pencils equally.
Each child got one half of the pencils.
How many pencils did each of them get?

To find one half of a group, we divide by 2.

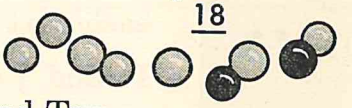
$\frac{1}{2}$ of 12 is 6.

$$2\overline{)12}\quad 6,\ 12$$

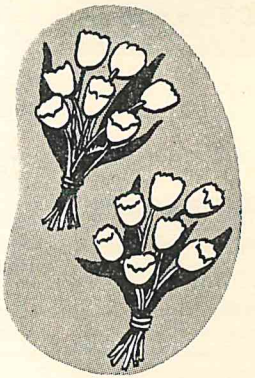
7. Joe's uncle gave him a bag of marbles.
There were 18 marbles in the bag.
Joe gave half of the marbles to Jim.
How many marbles did Jim get?

$$2\overline{)18}\quad 9,\ 18$$

To find $\frac{1}{2}$ of 18, we divide 18 by 2.



8. Mrs. White gave 4 apples to Bill and Tom.
They divided the apples equally between them.
How many apples did each boy get?

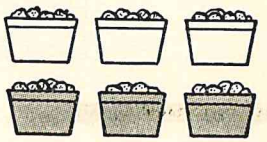


9. Mary cut 14 tulips to put into 2 vases.
She wants to put one half of them in each vase.
How many tulips should she put in each vase?

10. Sue shared 16¢ equally with Betty.
How many cents did each girl get?
One half of sixteen is how many?

11. Jack picked 8 boxes of strawberries
for Mrs. Brown. She gave him half of the berries.
How many boxes did Jack get?

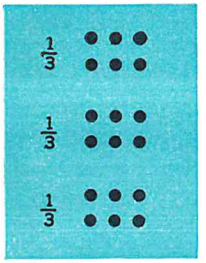
12. Jane picked 6 boxes of strawberries.
Mrs. Brown gave Jane half of the berries.
How many boxes did Jane get?



One Third of a Group

1. Alice's mother made 18 little cakes.
She put them on three plates to cool.
She put the same number of cakes on each plate.

How many cakes are on each plate?
One third of eighteen is how many?



When a group is divided into three equal parts, each part is one third.

To find $\frac{1}{3}$ of a number, we divide the number by 3.

$\frac{1}{3}$ of 18 is 6.

$$3\overline{)18}\quad\begin{matrix}6\\ \underline{18}\end{matrix}$$

2. Three boys went for a hike in the woods.
Jack's mother fixed 6 sandwiches for them.

"We will each get one third of the sandwiches," said Jack. "We will get two sandwiches apiece."

How many sandwiches should each boy get?

$$3\overline{)6}\quad\begin{matrix}2\\ \underline{6}\end{matrix}$$

$\frac{1}{3}$ of 6 is 2.

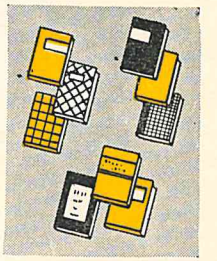
3. Three girls shared 12 tulips equally.
How many tulips should each girl get?

4. Jim made his 12 cars into 3 trains.
He put one third of the cars in each train.
How many cars did he put in each train?

5. Alice, Sue, and Jane made paper flowers.
They divided the flowers equally.
What part of the flowers would each girl's share be?

6. The three girls made 15 flowers.
How many should each girl get as her share?

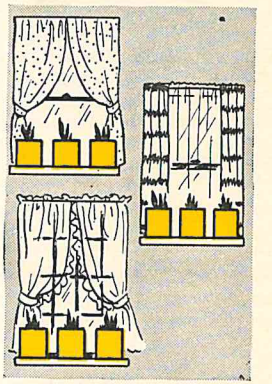
7. Betty has a new bookcase. It has 3 shelves.
Betty has 12 books. She wants to put
the same number of books on each shelf.
How many books should she put on each shelf?



8. "I have read one third of my books," said Joe.
"I have nine books. How many books have I read?"

9. Miss Brown had 18 bird pictures.
She asked Mary to divide them into 3 equal groups.
How many pictures should Mary put in each group?

10. Three girls made candy at Ann's house.
When they were ready to go home,
there were 12 pieces of candy left.
The girls divided the candy equally.
How many pieces of candy was each girl's share?

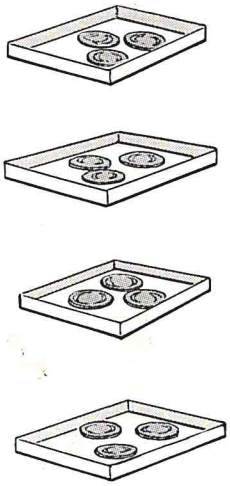


11. The children planted seeds in 9 boxes.
"Let us put the same number of boxes
in each of the three windows," said Mary.
How many boxes should they put in each window?

12. "You have twelve chickens," said Jim.
"I have one third as many chickens as you have.
How many chickens do I have?"

13. "You have three rabbits," said Joe.
"I have one third as many rabbits as you have.
How many rabbits do I have?"

One Fourth of a Group

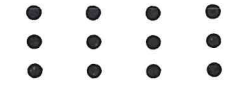


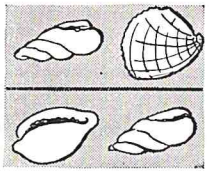
1. Jim put his 12 pennies into 4 boxes.
Did he put the same number of pennies
in each box?
What part of the pennies did he put in each box?
One fourth of twelve is how many?

To find $\frac{1}{4}$ of 12, we divide by 4.

$\frac{1}{4}$ of 12 is 3.

$$4\overline{)12}\quad 3,\ 12$$





2. Jane picked up 4 pretty shells on the beach.
"I will divide them with Betty," she said.
"I will give Betty two shells,
and I will keep two for myself."

How many shells should each girl get?
What part of the shells did each girl get?

3. Jack has 12 tomato plants for his garden.
He has room for 4 short rows in his garden.
How many tomato plants can be put in each row?

$$4\overline{)8}\quad 2,\ 8$$

$\frac{1}{4}$ of 8 is 2.

4. Mary wants to dress 8 dolls for the doll show.
She must make the dresses in 4 days.
She plans to make one fourth of them each day.
How many dresses should she make each day?

Find the answers:

5. $\frac{1}{2}$ of 8 $\quad$ $\frac{1}{2}$ of 12 $\quad$ $\frac{1}{2}$ of 16 $\quad$ $\frac{1}{3}$ of 12 $\quad$ $\frac{1}{2}$ of 10

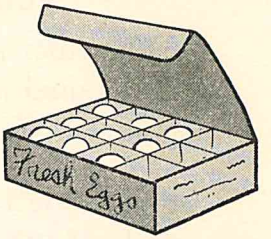
6. $\frac{1}{3}$ of 15 $\quad$ $\frac{1}{4}$ of 8 $\quad$ $\frac{1}{4}$ of 12 $\quad$ $\frac{1}{3}$ of 18 $\quad$ $\frac{1}{4}$ of 16

Parts of a Dozen

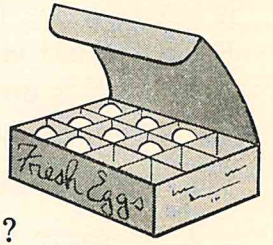
Betty went to the store for her mother.

"Mr. East did not count the eggs, Mother. He just gave me this box," said Betty. "He said there are a dozen eggs in it."

How many eggs should Betty have?
Are there a dozen eggs in the box?

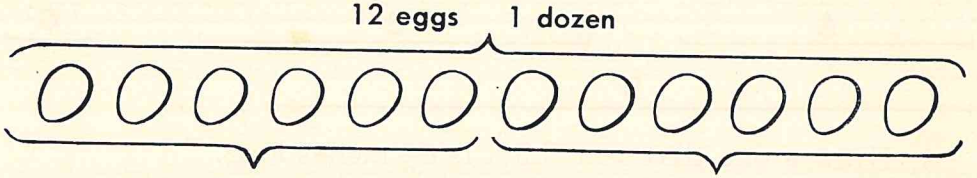


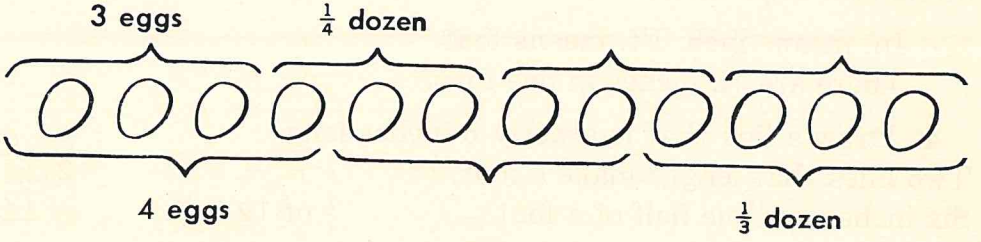
Mrs. White is going to bake a cake. She asked Betty to take one fourth of the eggs out of the box for her. How many eggs should Betty get?

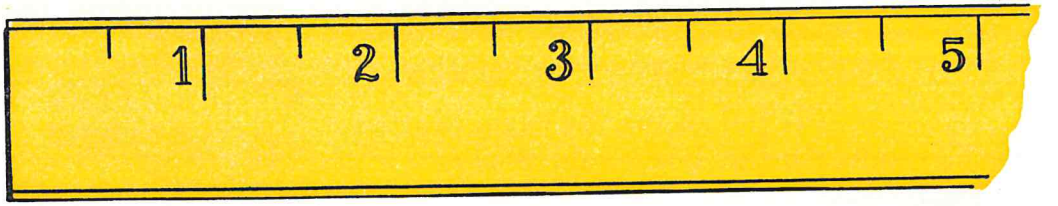


Then Mrs. White boiled an egg for breakfast. Now how many eggs have been used?

How many eggs are one third of a dozen?
How many eggs are one half of a dozen?
How many eggs are one fourth of a dozen?
Has Mrs. White used $\frac{1}{2}$ or $\frac{1}{3}$ of the dozen eggs?

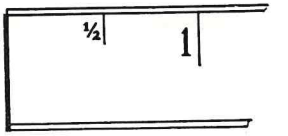






Parts of an Inch

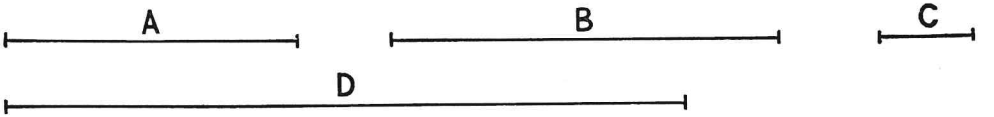
On the ruler above each inch is divided into two equal parts, or halves.
Each part is **one half** of an inch.



From the left end of the ruler to the first short mark is **one half inch**. The next half inch mark on the ruler is between the 1-inch mark and the 2-inch mark. From the left end of the ruler to this half inch mark, the length is one and one half inches.
We write **one and one half inches** like this: $1\frac{1}{2}$.

1. Show $2\frac{1}{2}$ inches on your ruler. Show $4\frac{1}{2}$ inches.

2. Measure these lines:



3. Draw a line that you think is $6\frac{1}{2}$ inches long. Measure it with your ruler. Is your line longer or shorter than six and one half inches?

In. means inch. Ft. means foot.
There are 12 inches in one foot.

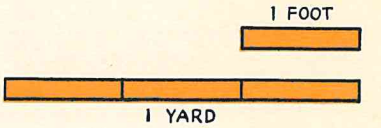
4. Draw a line that is exactly 6 inches long.
Two lines that length make a foot.
Six inches are one half of a foot.

$\frac{1}{2}$ of 12 is 6.

$$2\overline{)12}\quad 6,\ 12$$

A Yard

The boys in the picture are using a ruler that is a **yard** long. It is called a **yardstick**. They are measuring it with their foot rulers to find how many feet there are in a yard.



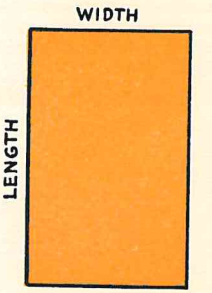
There are 3 feet in 1 yard.
One foot is one third of a yard.

1. Can you find how many inches are in a yard?
You know how many inches there are in a foot.
You know how many feet there are in a yard.
How will you find how many inches are in one yard?

12 in.
12 in.
12 in.
36 in.

2. Look at a real yardstick.
Find the figures that tell how many inches long it is.
There are 36 inches in a yard.

3. With a yardstick find about how many yards there are from the front of your room to the back of it. This is the **length** of the room.



4. Find about how many yards there are across the front of the room. This is the **width** of it.

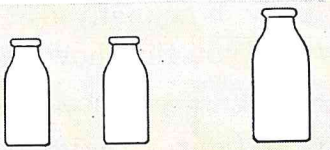
Pints and Quarts

Mary and Joe are learning about **pints** and **quarts.**
Mary filled the measuring cup with water.
Then she poured the water into the pint jar.
One more cup of water filled the pint jar.
Mary drew a picture to show what she found out.

There are two cups in a pint.
A cup is one half of a pint.

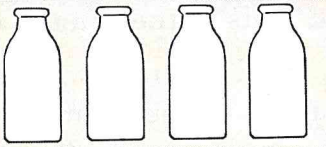
Joe poured water from the pint jar into a quart jar.
It took two pints of water to fill the quart jar.

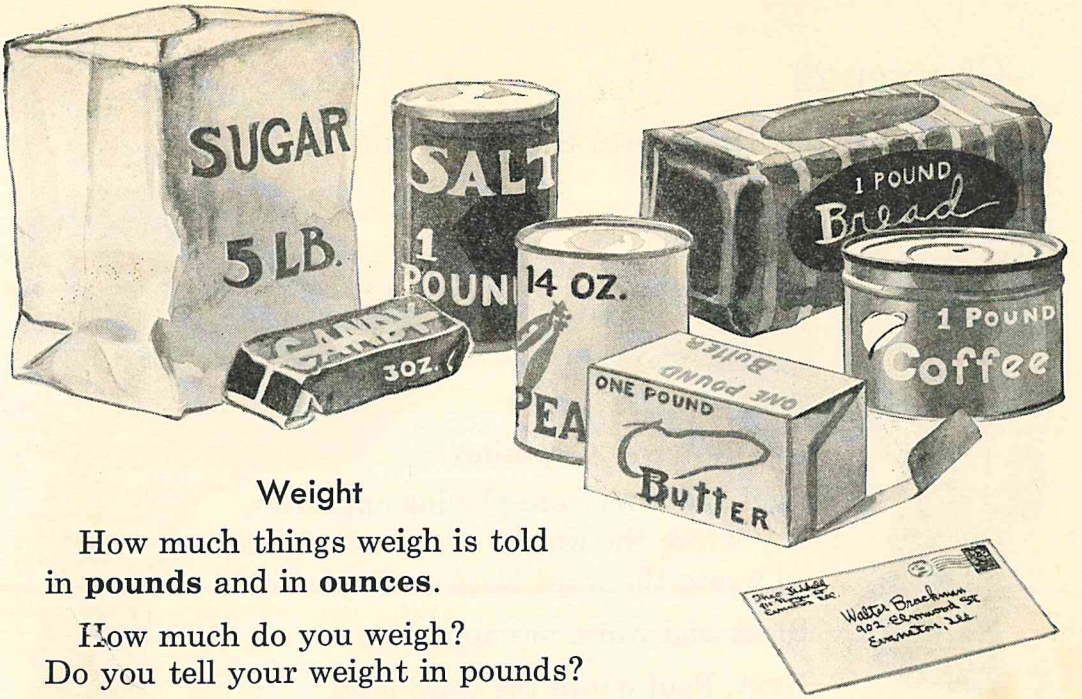
There are two pints in a quart.
A pint is one half of a quart.



Next they measured the water in a **gallon** jug.
They used the quart jar as their measure.
They had to empty the quart jar four times.

There are four quarts in a gallon.
A quart is one fourth of a gallon.





Weight

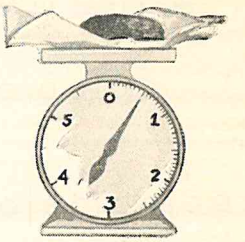
How much things weigh is told in **pounds** and in **ounces**.

How much do you weigh?
Do you tell your weight in pounds?

How much a letter weighs is told in ounces.

Look at the picture.
Name the things whose weight is marked in pounds.
Name the things whose weight is marked in ounces.

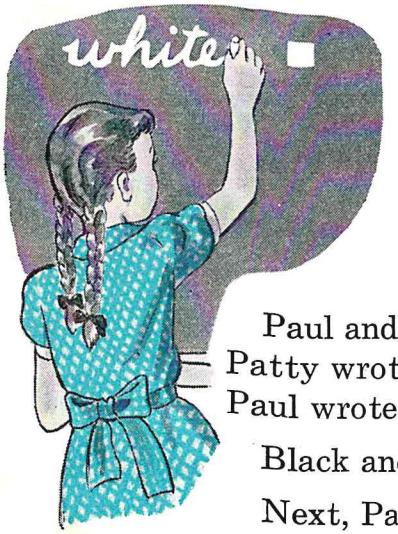
There are 16 ounces in a pound.
There are 8 ounces in a half pound.
8 ounces make one half of a pound.
$\frac{1}{2}$ of 16 is 8.
Lb. means pounds. Oz. means ounces.

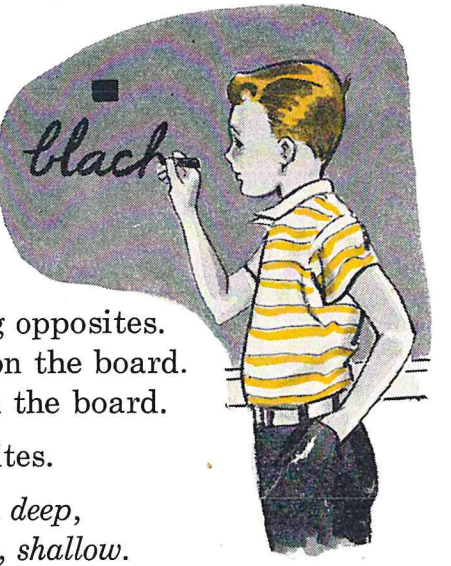


Add these weights:

12 lb.	75 lb.	4 oz.	10 oz.	15 lb.	85 lb.
44 lb.	86 lb.	9 oz.	12 oz.	39 lb.	95 lb.

Chapter 22
More Multiplications and Divisions





Opposites

Paul and Patty are playing opposites.
Patty wrote the word *white* on the board.
Paul wrote the word *black* on the board.

Black and white are opposites.

Next, Paul wrote the word *deep*,
and Patty wrote its opposite, *shallow*.

1. Say the opposites:

day more old light narrow subtract

2. What is the opposite of **multiply**?

3. What is the opposite of **divide**?

○○ ○○ ○○ $\begin{array}{r}2\\ \times 3\\ \hline 6\end{array}$ is the opposite of $2\overline{)\begin{array}{r}3\\6\\ \hline 6\end{array}}$. ○○|○○|○○

○○|○○|○○|○○ $2\overline{)\begin{array}{r}4\\8\\ \hline 8\end{array}}$ is the opposite of $\begin{array}{r}2\\ \times 4\\ \hline 8\end{array}$. ○○ ○○ ○○ ○○

4. Write the opposites:

$2\overline{)16}$ $\begin{array}{r}3\\ \times 4\end{array}$ $3\overline{)15}$ $\begin{array}{r}2\\ \times 6\end{array}$ $\begin{array}{r}3\\ \times 5\end{array}$ $3\overline{)18}$ $2\overline{)12}$ $\begin{array}{r}2\\ \times 8\end{array}$

The Threes

Mary wrote the multiplication and division questions for threes. Then she wrote the answers that she knew.

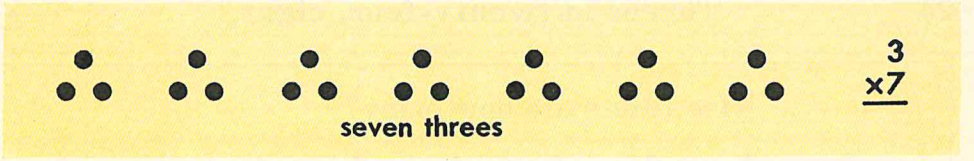
$$\begin{array}{rrrrrrrr} 3 & 3 & 3 & 3 & 3 & 3 & 3 & 3 \\ \times 2 & \times 3 & \times 4 & \times 5 & \times 6 & \times 7 & \times 8 & \times 9 \\ \hline 6 & 9 & 12 & 15 & 18 & & & \end{array}$$

$$\begin{array}{rrrrrrrr} 2 & 3 & 4 & 5 & 6 & & & \\ 3\overline{)6} & 3\overline{)9} & 3\overline{)12} & 3\overline{)15} & 3\overline{)18} & 3\overline{)21} & 3\overline{)24} & 3\overline{)27} \\ 6 & 9 & 12 & 15 & 18 & & & \end{array}$$

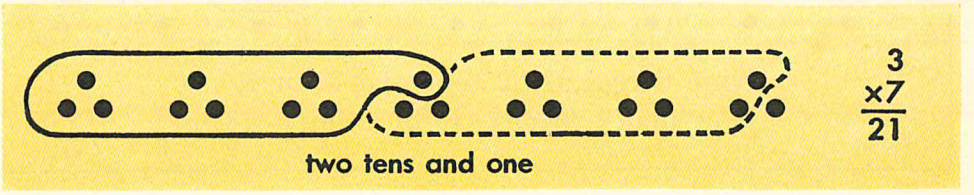
Mary said, "I know all but three multiplications and divisions for threes. I can soon learn them."

"You may start with **seven threes**," said Miss Green. "How many tens are seven threes?"

Mary made dots to show seven threes. Then she marked off groups of ten dots.



$$\begin{array}{r} 3 \\ \times 7 \\ \hline \end{array}$$



$$\begin{array}{r} 3 \\ \times 7 \\ \hline 21 \end{array}$$

Mary found that seven 3's are the same as 2 tens and one, or twenty-one. Seven threes are twenty-one.

More about Threes

"I know how many threes are in twenty-one," said Mary. "Seven threes are twenty-one. So there are seven threes in twenty-one."

$$\begin{array}{r} 3 \\ \times 7 \\ \hline 21 \end{array}$$

Seven threes are twenty-one.

Threes in twenty-one, seven.

$$3\overline{)21}\quad 7$$

Eight threes are how many?

Eight threes are 2 tens and 4, or 24.
How many threes are in twenty-four?

$$\begin{array}{r} 3 \\ \times 8 \\ \hline 24 \end{array}$$

Eight threes are twenty-four.

Threes in twenty-four, eight.

$$3\overline{)24}\quad 8$$

Nine threes are how many?

Nine threes are 2 tens and 7, or 27.
How many threes are in twenty-seven?

$$\begin{array}{r} 3 \\ \times 9 \\ \hline 27 \end{array}$$

Nine threes are twenty-seven.

Threes in twenty-seven, nine.

$$3\overline{)27}\quad 9$$

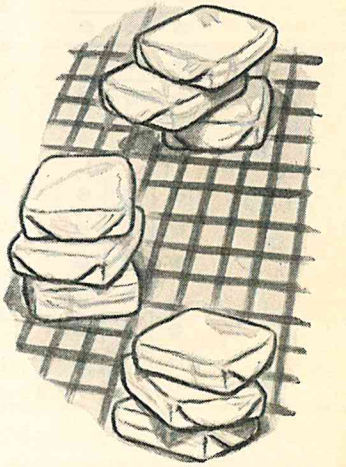
Here are the multiplications for 3's:

3	3	3	3	3	3	3	3
×2	×3	×4	×5	×6	×7	×8	×9
6	9	12	15	18	21	24	27

Here are the divisions for 3's:

2	3	4	5	6	7	8	9
3)6	3)9	3)12	3)15	3)18	3)21	3)24	3)27
6	9	12	15	18	21	24	27

A Picnic

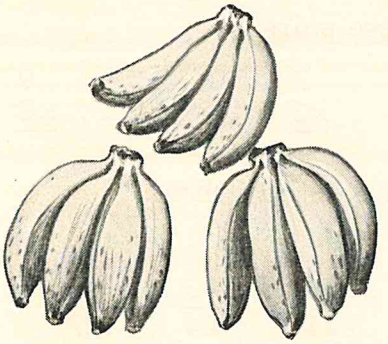


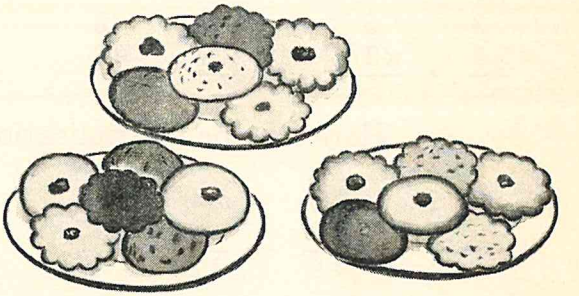
Susan, Mary, and Alice are going on a picnic. They are making their plans now.

1. Alice said, "I will make the sandwiches. Three sandwiches apiece should be enough." How many sandwiches should Alice make?

2. Mary said, "I will get eighteen cookies. That will be _____ cookies for each of us."

3. Susan said, "I will get a dozen bananas. That will be _____ bananas for each of us."





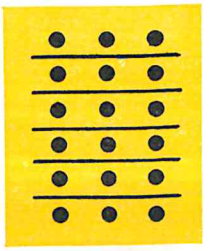
Multiplication Pairs

Miss Green said, "You can use what you know about threes to learn some new multiplications. If you know that six threes are eighteen, can you tell how many three sixes are?"

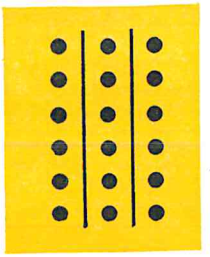
$$\begin{array}{r} 3 \\ \times 6 \\ \hline 18 \end{array} \qquad \begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$$

Alice said, "Three sixes are eighteen. Six threes and three sixes are pairs."

Jim said, "I can show that six threes and three sixes make the same answer."



Jim made eighteen dots on the board. He made 6 rows with 3 dots in each row. He said, "Here are six threes. Six threes are eighteen."



Next, he erased the left to right lines and drew up and down lines to show columns of dots instead of rows.

He said, "I still have the same 18 dots. But now I have 3 columns of dots, and there are 6 dots in each column. So I know that three sixes are eighteen."

Say the answers to these pairs:

$$\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array} \qquad \begin{array}{r} 5 \\ \times 3 \\ \hline \end{array} \qquad \begin{array}{r} 3 \\ \times 8 \\ \hline \end{array} \qquad \begin{array}{r} 8 \\ \times 3 \\ \hline \end{array} \qquad \begin{array}{r} 3 \\ \times 7 \\ \hline \end{array} \qquad \begin{array}{r} 7 \\ \times 3 \\ \hline \end{array} \qquad \begin{array}{r} 3 \\ \times 9 \\ \hline \end{array} \qquad \begin{array}{r} 9 \\ \times 3 \\ \hline \end{array}$$

Here are the multiplications for 3. Study them.

$$\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array} \qquad \begin{array}{r} 3 \\ \times 3 \\ \hline 9 \end{array} \qquad \begin{array}{r} 4 \\ \times 3 \\ \hline 12 \end{array} \qquad \begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array} \qquad \begin{array}{r} 6 \\ \times 3 \\ \hline 18 \end{array} \qquad \begin{array}{r} 7 \\ \times 3 \\ \hline 21 \end{array} \qquad \begin{array}{r} 8 \\ \times 3 \\ \hline 24 \end{array} \qquad \begin{array}{r} 9 \\ \times 3 \\ \hline 27 \end{array}$$

Opposites

Ann bought 3 pencils.
Each pencil cost 5 cents.
How much did Ann spend?

$$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$$

Ann spent 15 cents.
She bought some pencils.
Each pencil cost 5 cents.
How many did Ann buy?

$$5\overline{)15}$$

You can use a multiplication to learn a division.
Multiplication is the opposite of division.
If you know that three fives are fifteen,
you also know there are three fives in fifteen.

$$\begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array}$$

$$5\overline{)\begin{array}{r} 3 \\ 15 \\ \hline \end{array}}\quad \begin{array}{r} \\ 15 \\ \hline \end{array}$$

Here are some multiplications you have learned.
Think and say the answers to their opposites:
Three sixes are eighteen. Sixes in eighteen, three.

$$\begin{array}{r} 6 \\ \times 3 \\ \hline 18 \end{array} \quad 6\overline{)18} \qquad \begin{array}{r} 8 \\ \times 3 \\ \hline 24 \end{array} \quad 8\overline{)24} \qquad \begin{array}{r} 7 \\ \times 3 \\ \hline 21 \end{array} \quad 7\overline{)21} \qquad \begin{array}{r} 9 \\ \times 3 \\ \hline 27 \end{array} \quad 9\overline{)27}$$

$$\begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array} \quad 5\overline{)15} \qquad \begin{array}{r} 4 \\ \times 3 \\ \hline 12 \end{array} \quad 4\overline{)12} \qquad \begin{array}{r} 3 \\ \times 3 \\ \hline 9 \end{array} \quad 3\overline{)9} \qquad \begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array} \quad 2\overline{)6}$$

$$\begin{array}{r} 7 \\ \times 2 \\ \hline 14 \end{array} \quad 7\overline{)14} \qquad \begin{array}{r} 9 \\ \times 2 \\ \hline 18 \end{array} \quad 9\overline{)18} \qquad \begin{array}{r} 3 \\ \times 8 \\ \hline 24 \end{array} \quad 3\overline{)24} \qquad \begin{array}{r} 3 \\ \times 9 \\ \hline 27 \end{array} \quad 3\overline{)27}$$

Here are the divisions for 3. Study them.

$$2\overline{)\begin{array}{r} 3 \\ 6 \\ \hline \end{array}}\quad \begin{array}{r} \\ 6 \\ \hline \end{array} \qquad 3\overline{)\begin{array}{r} 3 \\ 9 \\ \hline \end{array}}\quad \begin{array}{r} \\ 9 \\ \hline \end{array} \qquad 4\overline{)\begin{array}{r} 3 \\ 12 \\ \hline \end{array}}\quad \begin{array}{r} \\ 12 \\ \hline \end{array} \qquad 5\overline{)\begin{array}{r} 3 \\ 15 \\ \hline \end{array}}\quad \begin{array}{r} \\ 15 \\ \hline \end{array}$$

$$6\overline{)\begin{array}{r} 3 \\ 18 \\ \hline \end{array}}\quad \begin{array}{r} \\ 18 \\ \hline \end{array} \qquad 7\overline{)\begin{array}{r} 3 \\ 21 \\ \hline \end{array}}\quad \begin{array}{r} \\ 21 \\ \hline \end{array} \qquad 8\overline{)\begin{array}{r} 3 \\ 24 \\ \hline \end{array}}\quad \begin{array}{r} \\ 24 \\ \hline \end{array} \qquad 9\overline{)\begin{array}{r} 3 \\ 27 \\ \hline \end{array}}\quad \begin{array}{r} \\ 27 \\ \hline \end{array}$$

Problems

1. Jim bought 5 marbles that cost 3 cents each.
How much should he pay for them?
Five threes are how many?

2. Bob pulled 24 radishes.
He wants to put them in bunches
with 8 radishes in each bunch.
How many bunches can he make?
How many eights are in 24?

$8\overline{)24}$ $\quad$ $\begin{array}{r} 3 \\ 8\overline{)24} \\ \underline{24} \end{array}$

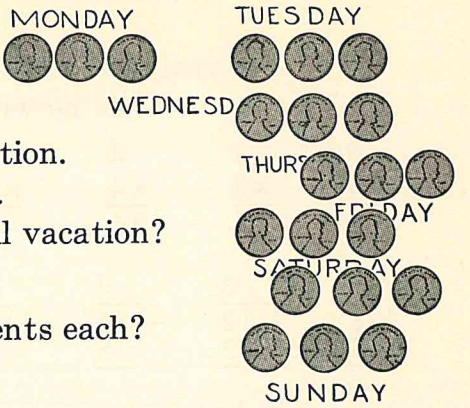
3. Betty counted the doll shoes that she and Jane had for the doll sale. There were 18 shoes.
Each doll needs a pair of shoes.
There were enough shoes for how many dolls?
How many twos are there in eighteen?

4. Jane wants 2 paper hats for each of her 6 dolls.
How many hats should she make?
Six twos are how many?

5. Mrs. West has 12 eggs.
She uses 3 eggs each day for breakfast.
For how many breakfasts does she have eggs?

6. Jack has 18 cents.
How many 6-cent tops can he buy?
How many sixes are there in eighteen? $6\overline{)18}$

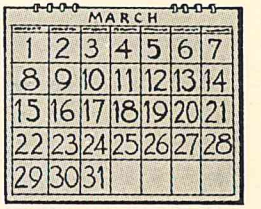
7. Sue saves 3 cents each day.
How much can she save in 7 days?
Seven threes are how many?



8. It is 3 weeks until summer vacation.
There are 5 school days in each week.
How many school days are there until vacation?

9. Jack has 27 cents.
Can he buy 3 airplanes that cost 9 cents each?
Three nines are how many?

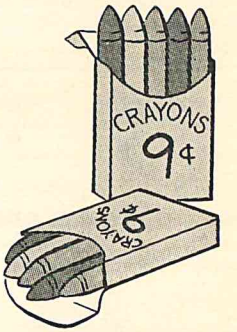
10. Four boys can ride in Bill's wagon at a time.
How many trips must be made
if each of the 12 boys gets a ride?



11. There are seven days in a week.
How many days are there in two weeks?
How many days are there in three weeks?

12. Joe has 12¢.
How many 6¢ candy bars can he buy?

13. Jane wants 2 boxes of crayons.
The crayons cost 9¢ a box.
How many cents does she need?



14. It takes 6 buttons for each of Sue's playsuits.
How many buttons does she need for 3 suits?

15. Jim has 15 pennies.
A nickel has the same value as 5 pennies.
How many nickels should Jim get for his pennies?

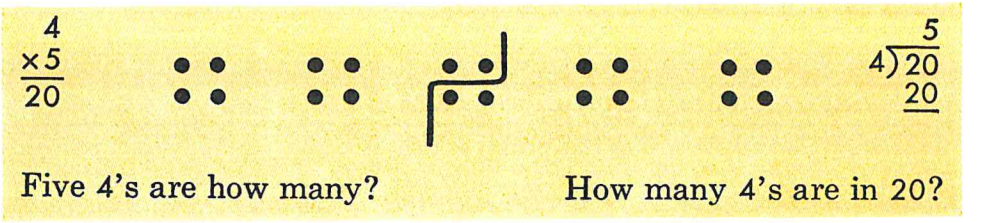
16. How much should Mary pay for six 3-cent stamps?
for three 3-cent stamps? for eight 3-cent stamps?
for nine 3-cent stamps?

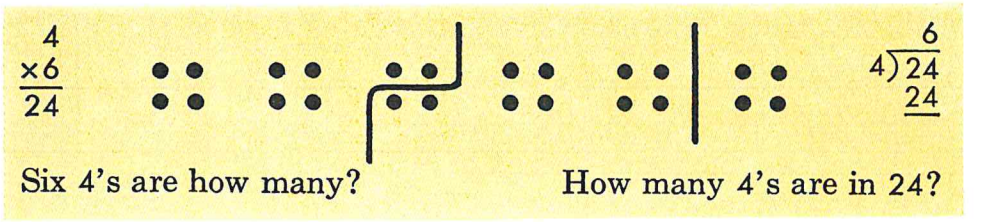
The Fours

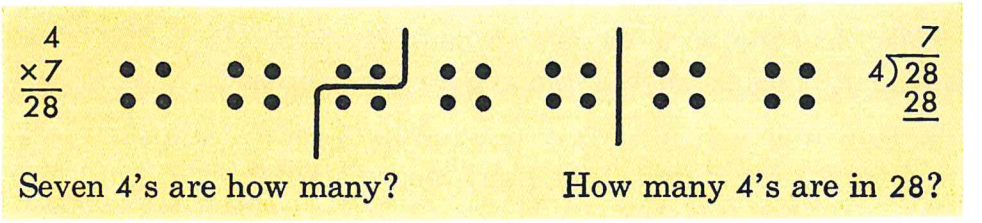
Joe wrote the multiplication and division questions for fours. Then he wrote the answers that he knew.

$4 \times 2 = 8$	$4 \times 3 = 12$	$4 \times 4 = 16$	4×5	4×6	4×7	4×8	4×9
$4\overline{)8}$	$4\overline{)12}$	$4\overline{)16}$	$4\overline{)20}$	$4\overline{)24}$	$4\overline{)28}$	$4\overline{)32}$	$4\overline{)36}$

"I have a lot of things to learn about fours," said Joe. "But they will be easy."

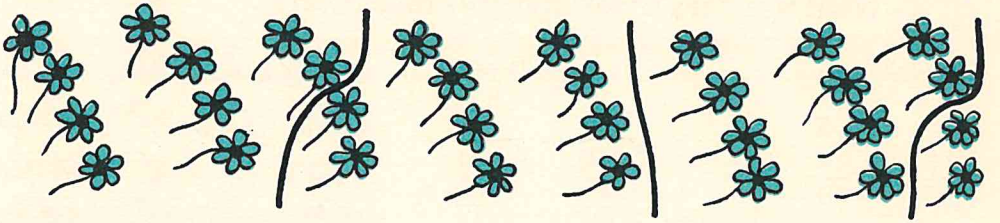




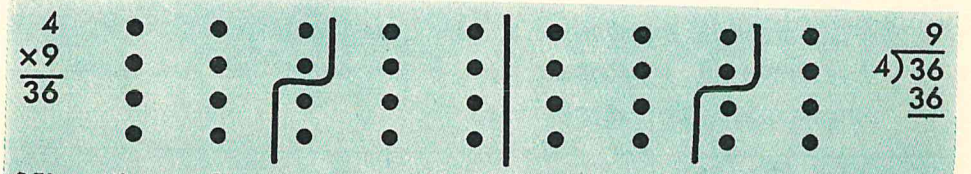


How many flowers are in each bunch?
How many bunches are there?
How many flowers are there in all?

$$\begin{array}{r} 4 \\ \times 8 \\ \hline 32 \end{array} \qquad 4\overline{)32}$$



Eight 4's are how many? **How many 4's are in 32?**



Nine 4's are how many? **How many 4's are in 36?**

Multiplications for Fours

4	4	4	4	4	4	4	4
×2	×3	×4	×5	×6	×7	×8	×9
8	12	16	20	24	28	32	36

Divisions for Fours

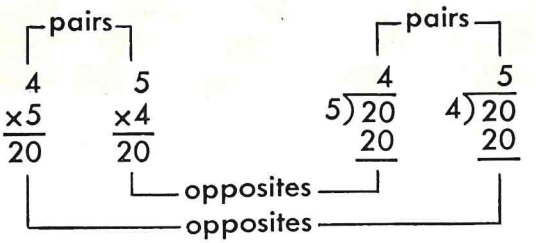
2	3	4	5	6	7	8	9
4)8	4)12	4)16	4)20	4)24	4)28	4)32	4)36
8	12	16	20	24	28	32	36

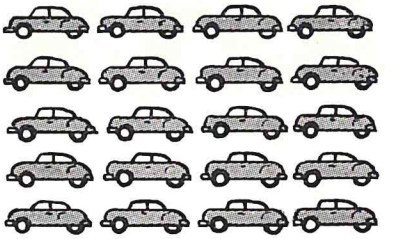
Say the answers:

4	4	4	4	4	4	4	4
×3	×6	×2	×4	×7	×5	×8	×9
4)16	4)12	4)20	4)8	4)24	4)32	4)28	4)36

The Four Family

1. Look at the picture of the cars. The picture shows two multiplications and two divisions. What are they? How did you find them?





2. Find the answers to the questions in each box. Make a picture to help you. Then use what you know about pairs and opposites.

$\begin{array}{r} 4 \\ \times 6 \\ \hline \end{array}$ $\begin{array}{r} 6 \\ \times 4 \\ \hline \end{array}$ $4\overline{)24}$ $6\overline{)24}$	$\begin{array}{r} 4 \\ \times 7 \\ \hline \end{array}$ $\begin{array}{r} 7 \\ \times 4 \\ \hline \end{array}$ $4\overline{)28}$ $7\overline{)28}$
$\begin{array}{r} 4 \\ \times 8 \\ \hline \end{array}$ $\begin{array}{r} 8 \\ \times 4 \\ \hline \end{array}$ $4\overline{)32}$ $8\overline{)32}$	$\begin{array}{r} 4 \\ \times 9 \\ \hline \end{array}$ $\begin{array}{r} 9 \\ \times 4 \\ \hline \end{array}$ $4\overline{)36}$ $9\overline{)36}$

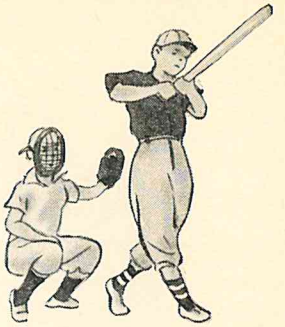
The Multiplications for Four

2	3	4	5	6	7	8	9
$\times 4$	$\times 4$	$\times 4$	$\times 4$	$\times 4$	$\times 4$	$\times 4$	$\times 4$
8	12	16	20	24	28	32	36

The Divisions for Four

$2\overline{)8}$	$3\overline{)12}$	$4\overline{)16}$	$5\overline{)20}$	$6\overline{)24}$	$7\overline{)28}$	$8\overline{)32}$	$9\overline{)36}$
4	4	4	4	4	4	4	4
8	12	16	20	24	28	32	36

Problems



1. It takes 9 boys for a baseball team.
There are 18 boys who want to play baseball.
Are there enough boys for two teams?

2. There are 5 boys on a basketball team.
If 10 boys want to play basketball,
how many teams can there be?

3. Nine boys are going on an all-day hike.
They will divide into equal groups to get the 3 meals.
How many boys should help get each meal ready?

4. The boys want to have 2 hot dogs apiece.
How many hot dogs will be needed for the 9 boys?

5. Each of the 6 boys will take 4 apples.
How many apples will the boys take?

6. Ann wants to take a picture of each
of 24 girls who will be at her party.
She can take 8 pictures on each roll of film.
How many rolls of film will she need?

7. Sue has 27 cents.
How many 9-cent notebooks can she buy?
If she had 36¢, how many notebooks could she buy?

8. Mrs. Allen is going to make 2 cakes
for the school supper.
She needs 6 eggs for a cake.
How many eggs will she need for both cakes?

9. Betty has 28 pictures to divide equally
among 4 of her friends.
How many pictures should she give to each of them?

The Fives

"I will give you a quarter for your five nickels," said Bill.

"Would I have as much money then?" asked Jane.

"Why not?" said Bill. "A quarter is 25 cents. How much are your nickels worth?"

"I'll count by **fives** because a nickel is 5 cents," said Jane as she counted her nickels.

$$\begin{array}{r} 5 \\ \times 5 \\ \hline 25 \end{array}$$

$$5\overline{)25}\quad 5,\ 25$$

Count by fives to find out if 5 nickels are 25 cents.

Five fives are how many?

How many fives are in twenty-five?

Bill put a nickel beside the quarter and said, "I have 30 cents. I have the same as 6 fives. So 6 fives are 30."
Was Bill right?

$$\begin{array}{r} 5 \\ \times 6 \\ \hline 30 \end{array}$$

$$5\overline{)30}\quad \begin{array}{r} 6 \\ 30 \end{array}$$

How many are 6 fives? How many fives are in 30?

Mary put 7 nickels in a row and counted them by fives. She said that 7 nickels are 35 cents. So 7 fives are 35.
Count the nickels by fives to see if Mary was right.

$$\begin{array}{r} 5 \\ \times 7 \\ \hline \end{array}$$

$$5\overline{)35}$$

Seven 5's are how many? How many 5's are in 35?

How many cents do 8 nickels make?
Eight 5's are how many? How many 5's are in 40?

$$\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$$

$$5\overline{)40}$$

How many cents do 9 nickels make?
Nine 5's are how many? How many 5's are in 45?

$$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$$

$$5\overline{)45}$$

The Fives

Learn the multiplications about fives. Read the table: Two fives are ten; three fives are fifteen, and so on.

Multiplications for Fives

5 ×2 = 10	5 ×3 = 15	5 ×4 = 20	5 ×5 = 25	5 ×6 = 30	5 ×7 = 35	5 ×8 = 40	5 ×9 = 45

Learn the divisions about fives. Read the table: Fives in ten, two; two fives are ten, and so on.

Divisions for Fives

2	3	4	5	6	7	8	9
5)10	5)15	5)20	5)25	5)30	5)35	5)40	5)45
10	15	20	25	30	35	40	45

1. Say the answers:

5 ×3	5 ×5	5 ×7	5 ×6	5 ×2	5 ×9	5 ×4	5 ×8
5)20	5)25	5)40	5)15	5)45	5)35	5)30	5)10

add
number
eleven
less

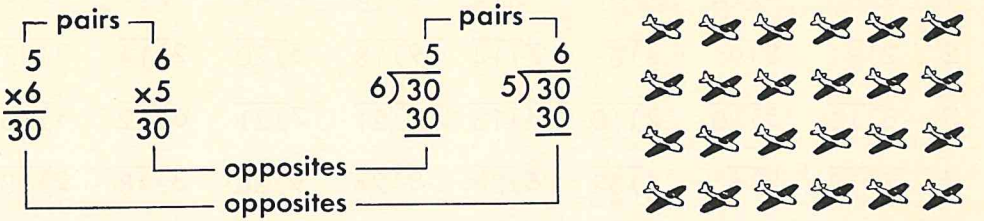
2. Ruth has 6 nickels in her bank. She wants to change all of them for pennies. How many pennies should she get for her nickels?

3. Fred learns to spell 4 words each day. How many words will he learn to spell in 5 days?

4. Jim feeds his pony 5 ears of corn each day. How many ears of corn does Jim feed him in a week?

The Five Family

1. Look at the picture of the airplanes. The picture shows two multiplications and two divisions. What are they? How did you find them?



2. Find the answers to the questions in each box. Make a picture to help you. Then use what you know about pairs and opposites.

5×4 $\quad 4 \times 5$ $\quad 5\overline{)20}$ $\quad 4\overline{)20}$	5×7 $\quad 7 \times 5$ $\quad 5\overline{)35}$ $\quad 7\overline{)35}$
5×8 $\quad 8 \times 5$ $\quad 5\overline{)40}$ $\quad 8\overline{)40}$	5×9 $\quad 9 \times 5$ $\quad 5\overline{)45}$ $\quad 9\overline{)45}$

The Multiplications for Five

$2 \times 5 = 10$	$3 \times 5 = 15$	$4 \times 5 = 20$	$5 \times 5 = 25$	$6 \times 5 = 30$	$7 \times 5 = 35$	$8 \times 5 = 40$	$9 \times 5 = 45$

The Divisions for Five

$2\overline{)10}$ 5	$3\overline{)15}$ 5	$4\overline{)20}$ 5	$5\overline{)25}$ 5	$6\overline{)30}$ 5	$7\overline{)35}$ 5	$8\overline{)40}$ 5	$9\overline{)45}$ 5
10	15	20	25	30	35	40	45

Division Questions

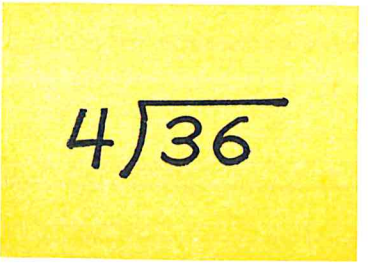
[Self-test]

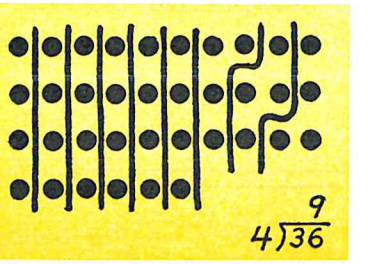
Copy these division questions on paper.
Then write the answers. Do not guess.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1.	$2\overline{)4}$	$2\overline{)12}$	$3\overline{)6}$	$4\overline{)12}$	$3\overline{)15}$	$4\overline{)28}$	$5\overline{)15}$	$6\overline{)18}$
2.	$2\overline{)8}$	$3\overline{)9}$	$4\overline{)8}$	$7\overline{)14}$	$9\overline{)18}$	$5\overline{)20}$	$2\overline{)14}$	$3\overline{)27}$
3.	$8\overline{)16}$	$5\overline{)10}$	$2\overline{)10}$	$4\overline{)16}$	$3\overline{)21}$	$7\overline{)21}$	$6\overline{)12}$	$4\overline{)20}$
4.	$3\overline{)12}$	$2\overline{)6}$	$4\overline{)32}$	$6\overline{)24}$	$8\overline{)24}$	$9\overline{)36}$	$3\overline{)18}$	$2\overline{)18}$
5.	$4\overline{)36}$	$2\overline{)16}$	$3\overline{)24}$	$4\overline{)24}$	$7\overline{)28}$	$9\overline{)27}$	$8\overline{)32}$	$4\overline{)32}$

If you did not know an answer, make a dot picture to find the answer. Then write the division.
Say it over and over so you will remember it.

Make number cards for the ones you do not know.





6.	$8\overline{)16}$	$2\overline{)16}$	$4\overline{)32}$	$3\overline{)27}$	$2\overline{)18}$	$4\overline{)16}$	$5\overline{)20}$	$4\overline{)24}$
7.	$3\overline{)15}$	$4\overline{)28}$	$4\overline{)36}$	$7\overline{)14}$	$3\overline{)21}$	$2\overline{)18}$	$4\overline{)32}$	$7\overline{)21}$
8.	$8\overline{)32}$	$6\overline{)24}$	$6\overline{)18}$	$7\overline{)28}$	$4\overline{)8}$	$9\overline{)18}$	$2\overline{)14}$	$2\overline{)12}$
9.	$9\overline{)36}$	$6\overline{)12}$	$8\overline{)24}$	$9\overline{)27}$	$4\overline{)20}$	$2\overline{)8}$	$3\overline{)9}$	$2\overline{)10}$

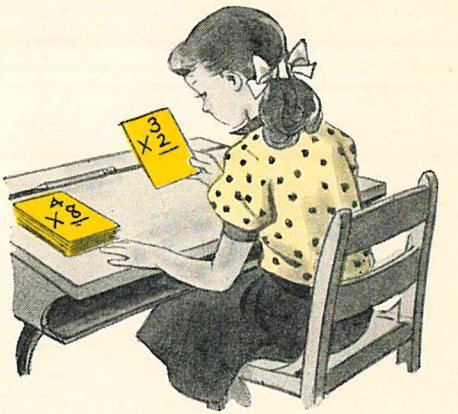
Multiplications [Self-test]

Copy these multiplication questions on paper. Then write the answers. Do not guess.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1.	3 ×2	2 ×5	4 ×4	5 ×2	3 ×7	7 ×3	3 ×3	4 ×2	4 ×9
2.	5 ×3	2 ×2	4 ×7	8 ×4	9 ×3	2 ×6	6 ×3	3 ×6	7 ×3
3.	9 ×2	4 ×8	2 ×4	4 ×3	6 ×2	7 ×4	8 ×2	2 ×3	3 ×8
4.	4 ×5	2 ×8	4 ×9	6 ×4	8 ×3	3 ×5	2 ×7	9 ×4	4 ×8
5.	2 ×9	4 ×6	3 ×4	3 ×8	5 ×4	3 ×9	7 ×2	7 ×4	9 ×3

If you did not know an answer, make a dot picture to find the answer. Then write the multiplication. Say it over and over so you will remember it.

Make number cards for the ones you do not know.

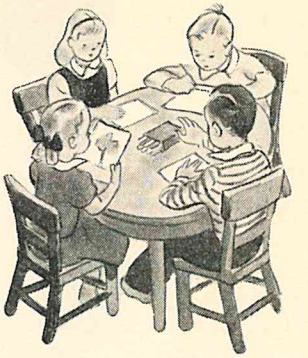


Practice

Say all the answers you can, but do not guess.
Find any answer you do not know. Then study it.

1.	5×2	9×2	3×2	6×2	6×4	3×8	6×3	9×4
2.	2×2	4×4	7×4	3×5	4×7	7×3	3×3	4×9
3.	4×3	3×6	8×3	3×9	4×6	8×4	3×7	4×5
4.	4×2	9×3	3×4	5×3	2×4	4×8	2×3	5×4
5.	$5\overline{)25}$	$4\overline{)28}$	$4\overline{)36}$	$9\overline{)36}$	$8\overline{)16}$	$2\overline{)16}$	$7\overline{)14}$	$5\overline{)10}$
6.	$3\overline{)6}$	$4\overline{)12}$	$3\overline{)18}$	$2\overline{)6}$	$4\overline{)8}$	$3\overline{)9}$	$4\overline{)16}$	$5\overline{)15}$
7.	$6\overline{)12}$	$6\overline{)18}$	$8\overline{)24}$	$2\overline{)4}$	$3\overline{)12}$	$7\overline{)21}$	$9\overline{)27}$	$3\overline{)15}$
8.	$2\overline{)18}$	$3\overline{)21}$	$4\overline{)20}$	$4\overline{)32}$	$2\overline{)8}$	$3\overline{)24}$	$4\overline{)24}$	$3\overline{)27}$
9.	$8\overline{)32}$	$5\overline{)20}$	$2\overline{)10}$	$7\overline{)28}$	$2\overline{)14}$	$6\overline{)24}$	$2\overline{)12}$	$9\overline{)18}$
10.	$8 + 7$	$6 + 6$	$7 + 5$	$4 + 9$	$2 + 8$	$3 + 6$	$4 + 5$	$5 + 7$
11.	$7 + 9$	$8 + 5$	$7 + 6$	$6 + 9$	$5 + 8$	$2 + 7$	$6 + 4$	$6 + 7$
12.	$13 - 7$	$14 - 8$	$15 - 9$	$13 - 6$	$16 - 8$	$14 - 6$	$15 - 8$	$14 - 9$
13.	$13 - 8$	$17 - 8$	$18 - 9$	$12 - 5$	$11 - 7$	$11 - 5$	$15 - 7$	$14 - 7$

Problems



1. Ann asked 4 children to work at each table.
There were 5 tables.
How many children worked at the tables?

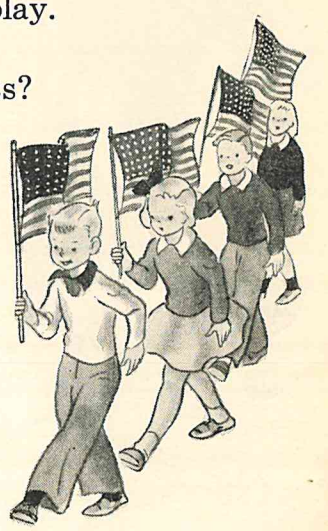
2. How many cents are the same as a nickel?
Jack has 6 nickels. How many cents has he?

3. Jane bought 4 birthday cards at 7¢ each.
How much should she pay for the cards?

4. Ann has 21 cents.
How many 7-cent cards can she buy with her money?

5. Jim wants to buy 4 bus tickets.
They cost 8 cents each.
How much should he pay for them?

6. The girls are making 7 paper hats for the play.
Each hat is to have 4 flowers on it.
How many flowers should they make for the hats?

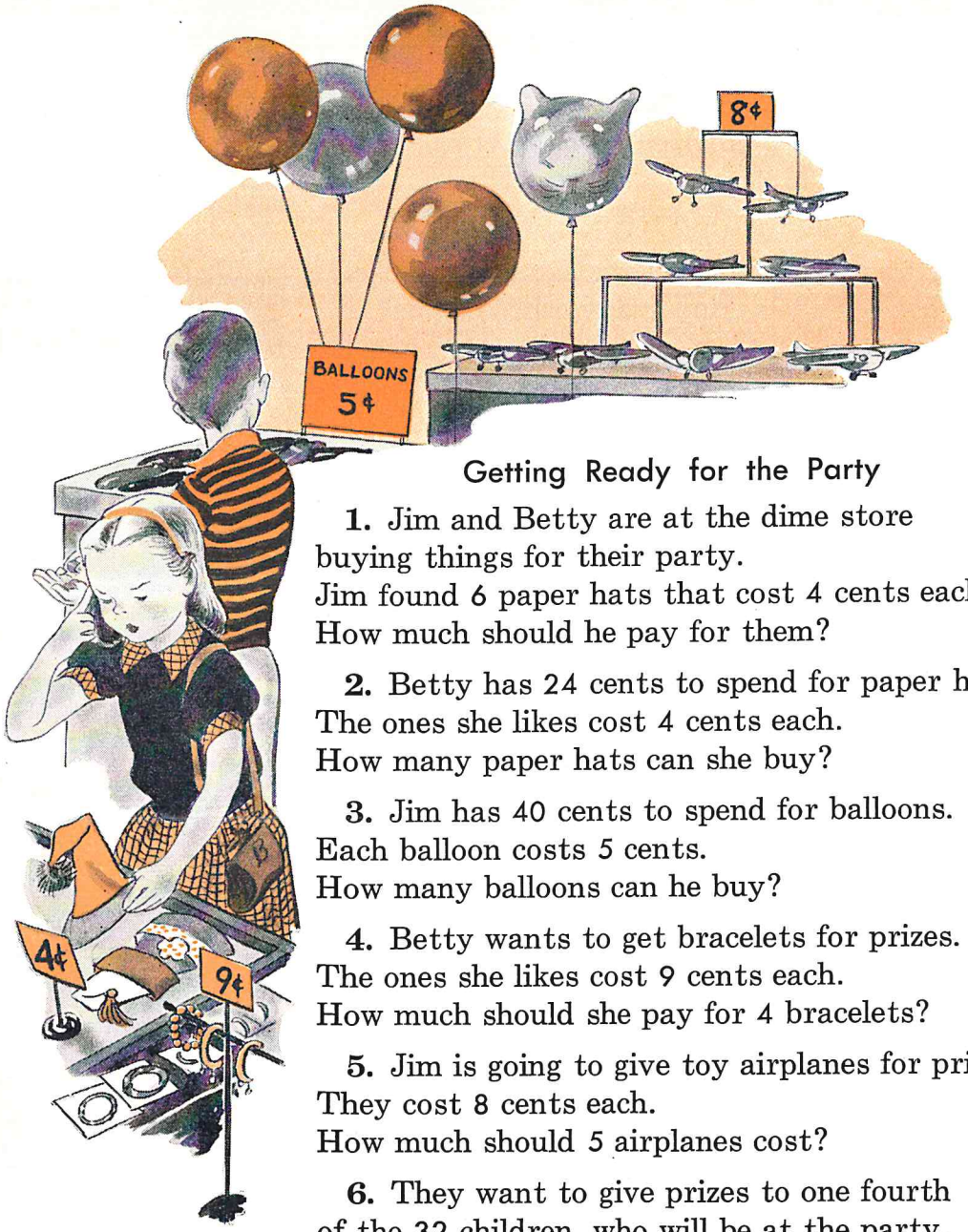


7. For the flag drill there will be 9 rows
of children with 4 children in each row.
How many children will be in the flag drill?

8. Jack has 20 cents.
He wants to buy pencils that cost 5 cents each.
How many pencils can he buy?

9. There are to be 32 children at Sue's party.
Eight children can eat at each table.
How many tables will she use?

10. There are 7 days in a week.
How many weeks are there in 28 days?
in 14 days?



Getting Ready for the Party

1. Jim and Betty are at the dime store buying things for their party.
Jim found 6 paper hats that cost 4 cents each.
How much should he pay for them?

2. Betty has 24 cents to spend for paper hats.
The ones she likes cost 4 cents each.
How many paper hats can she buy?

3. Jim has 40 cents to spend for balloons.
Each balloon costs 5 cents.
How many balloons can he buy?

4. Betty wants to get bracelets for prizes.
The ones she likes cost 9 cents each.
How much should she pay for 4 bracelets?

5. Jim is going to give toy airplanes for prizes.
They cost 8 cents each.
How much should 5 airplanes cost?

6. They want to give prizes to one fourth of the 32 children, who will be at the party.
How many prizes do they need?

At the Candy Store

1. Jane has 12 cents.
How many candy sticks can she buy if they cost 2 cents each?

2. How much will 5 sticks cost if each stick costs 2 cents?

3. How many 4-cent candy bars can Jane buy with her 12 cents?

4. How many 6-cent candy bars can Jane buy with her 30 cents?

5. Jim has 15 cents.
Can he buy 3 of the 6-cent bars?
Can he buy 3 of the 4-cent bars?

6. Peanut candy is 3¢ a square.
How much should 5 squares cost? 8 squares?

7. Mary has 14 cents to spend.
How many 2-cent candy sticks could she buy?

8. Mary bought 4 sticks of candy at 2¢ a stick.
How much should Mary pay for the 4 sticks?

9. How much would 3 of the 9-cent bars cost?
4 of the 9-cent bars? 2 of the 9-cent bars?

10. Jane has a dime.
Can she buy 3 peanut squares that cost 3¢ each?

Two Ways to Divide a Group

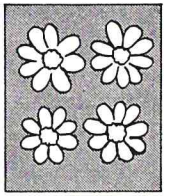
1. Sixteen boys want to run a relay race.
There should be 4 boys on each team.
How many teams will there be?
We find how many groups of 4 there are.
We find how many 4's are in 16.

2. Sixteen boys want to run a relay race.
Four teams are needed.
How many boys can be on each team?
We divide 16 into 4 equal groups.
Then we find how many are in each group.

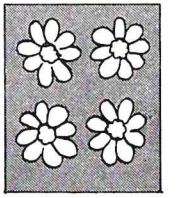
> We divide to find how many equal groups there are.
> We divide to find how many there are in each group.

3. Fourteen children are playing tag.
They must have 2 equal groups.
How many children are on each side?

4. Ann asked 12 children to work at 3 tables.
The same number of children worked at each table.
How many children worked at each table?



5. May plans to put 8 paper flowers on the cover of the scrapbook that she is making.
She can make 4 flowers from one piece of paper.
How many pieces of paper will she need?



6. "We need five boys for a basketball team.
There are ten of us. We can have two teams,"
said Jim. Was Jim right?

How Well Do You Remember? [Test]

Say and write the answers. Watch the signs.

1.

8	8	6	7	3	5	17	9	4
+7	+9	×4	+9	×9	×4	−9	×3	×4

2.

14	15	16	13	8	7	9	9	18
−9	−4	−7	−8	×4	+8	−5	+6	−9

3.

$4\overline{)36}$	6	11	$8\overline{)32}$	9	3	$3\overline{)27}$	9	$7\overline{)21}$
	×4	−8		+5	+8		×4	

4. Add these numbers. Check each answer.

(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)	(*i*)
					4	8	36	60
20	68	85	76	88	7	9	85	40
37	59	17	28	75	5	6	87	70

5. Subtract these numbers. Check each answer.

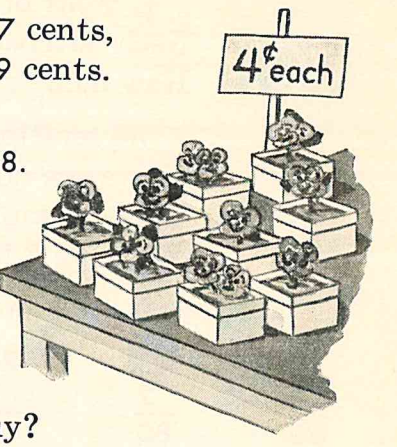
98	105	50	92	153	150	164	102	120
40	63	18	43	78	87	95	77	86

6. Jane bought 2 heads of lettuce for 17 cents, a dozen eggs for 52 cents, and meat for 89 cents. How much should she pay in all?

7. Jim bought a football that cost $2.98. He gave the clerk a 5-dollar bill. Count the change Jim should get back.

8. Carrots cost 8¢ a bunch. How much should 2 bunches cost?

9. Pansy plants cost 4 cents each. Sue has 36¢. How many plants can she buy?



Chapter 23
Multiplying Tens

How We Multiply Tens

"Jim, when you get three bundles of ten sticks, can you tell how many you have?" asked Miss Brown.

"I can count by tens," said Jim. "Ten, twenty, thirty. I have thirty sticks. Three tens are thirty."

"We write it with figures like this," said Miss Brown. "We write 3 in ten's place in the answer. The 0 keeps 3 in ten's place.

$$\begin{array}{r} 10 \\ \times 3 \\ \hline 30 \end{array}$$

We multiply tens the way we multiply ones.

1. Four of the girls are making notebooks. Each notebook takes 20 pieces of paper. How many pieces are needed for 4 notebooks?

$$\begin{array}{r} 20 \\ \times 4 \\ \hline 80 \end{array}$$

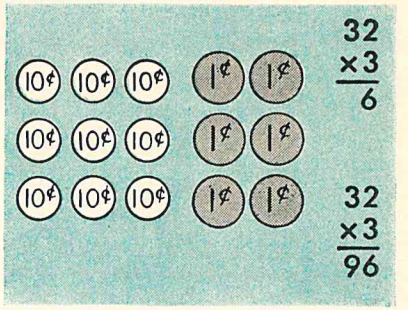
We multiply to find how many. There are no ones; so we write 0 in one's place. Then we multiply the tens. Four 2's are 8. We write 8 in ten's place.

2. Tell how these numbers are multiplied:

$$\begin{array}{r} 30 \\ 2 \\ \hline 60 \end{array} \qquad \begin{array}{r} 40 \\ 2 \\ \hline 80 \end{array} \qquad \begin{array}{r} 20 \\ 3 \\ \hline 60 \end{array} \qquad \begin{array}{r} 30 \\ 3 \\ \hline 90 \end{array} \qquad \begin{array}{r} 20 \\ 2 \\ \hline 40 \end{array} \qquad \begin{array}{r} 20 \\ 4 \\ \hline 80 \end{array} \qquad \begin{array}{r} 10 \\ 4 \\ \hline 40 \end{array}$$

Multiplying Tens and Ones

1. A ticket for the basketball game costs 32¢.
Jane wants to go and take two of her friends.
How much will the 3 tickets cost?



$$\begin{array}{r} 32 \\ \times\ 3 \\ \hline 6 \end{array}$$

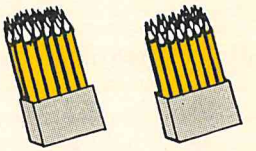
$$\begin{array}{r} 32 \\ \times\ 3 \\ \hline 96 \end{array}$$

Jane wants to multiply 32 by 3.
She multiplies the ones first.
She thinks, "Three twos are six."
She writes 6 in one's place.
Then she multiplies the tens.
She thinks, "Three threes are nine."
She writes 9 in ten's place.
The three tickets cost 96 cents.

2. Tell how these numbers are multiplied:

33	42	21	43	32	21	22	23	33
2	2	3	2	2	4	4	3	3
66	84	63	86	64	84	88	69	99

3. Miss Brown has 2 boxes.
There are 24 pencils in each box.
How many pencils does she have?



$$\begin{array}{r} 24 \\ \times\ 2 \\ \hline \end{array}$$

4. Ann made 3 bunches of violets.
She put 23 violets in each bunch.
How many violets did she use?

5. Bill bought 2 boxes of pears.
There were 44 pears in each box.
How many pears did Bill buy?

$$\begin{array}{r} 23 \\ \times\ 3 \\ \hline \end{array}$$

6. Multiply these numbers:

44	33	22	23	24	34	33	22	12
2	3	3	2	2	2	2	4	4

Multiplying Tens and Ones

1. Betty put 42 jars of fruit on each shelf of the cupboard. There were three shelves. How many jars of fruit did she put on the shelves?

$$\begin{array}{r} 42 \\ \times 3 \\ \hline 6 \end{array} \qquad \begin{array}{r} 42 \\ \times 3 \\ \hline 126 \end{array}$$

We multiply to find the number of jars.
First, we multiply the ones.
We write 6 in one's place in the answer.
Then we multiply the tens. Four 3's are 12.
There are 12 tens, or 1 hundred and 2 tens.
We write 1 in hundred's place and 2 in ten's place.

$$\begin{array}{r} 52 \\ \times 4 \\ \hline \end{array}$$

2. Jim put the empty jars in barrels. He put 52 jars in each of 4 barrels. How many jars did he put in the barrels?

3. Tell how we multiply these numbers. Check each one.

40	50	32	63	52	92	54	80
2	3	4	3	2	3	2	4
80	150	128	189	104	276	108	320

Multiply these numbers. Check each answer.

	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)
4.	80	43	53	24	20	42	90	34
	2	3	2	2	6	4	2	2
5.	63	42	22	40	30	74	83	90
	2	3	2	5	6	2	3	4

The Ones

Mary used pennies to show the multiplications for ones. She put down pennies like this:

"Here are two pennies. They show two ones. Two ones are two," she said.

This is the way we write it:

$$\begin{array}{r} 1 \\ \times 2 \\ \hline 2 \end{array}$$

Then Mary put down another penny. The 3 pennies looked like this:

She said, "These pennies show three ones. Three ones are three."

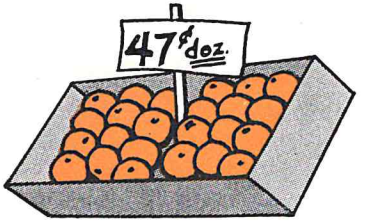
Can you say the rest of the **ones**?

1	1	1	1	1	1	1	1	1
×1	×2	×3	×4	×5	×6	×7	×8	×9
1	2	3	4	5	6	7	8	9

One multiplied by any number gives that number.

Copy and multiply:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1.	81	90	72	41	83	61	50	41
	4	5	4	6	3	5	8	8
2.	51	70	31	52	42	72	21	40
	9	5	8	4	4	3	7	6
3.	51	41	90	41	31	63	80	21
	6	7	4	9	6	3	5	6
4.	50	51	90	62	31	51	31	21
	5	7	3	2	7	9	9	9



Carrying in Multiplication

1. Jack bought 2 dozen oranges that sold for 47 cents a dozen. How much should he pay for them?

To find the cost, we multiply 47 cents by 2.
First, we multiply the ones.
Two 7's are 14, or 1 ten and 4 ones.
We write 4 in one's place and carry 1 (ten). We add it to the tens when we multiply them.
Two 4's are 8, and 1 are 9.
We write 9 in ten's place.
The 2 dozen oranges cost 94 cents.

$$\begin{array}{r} 47¢ \\ \times 2 \\ \hline 4 \end{array} \qquad \begin{array}{r} 47¢ \\ \times 2 \\ \hline 94¢ \end{array}$$

2. If your car runs 17 miles on one gallon of gas, how far will it run on 4 gallons of gas?

To find the answer to the question, we multiply 17 miles by 4.
First, we multiply the ones.
Four 7's are 28, or 2 tens and 8 ones.
We write 8 in one's place and carry the 2 tens.
Then we multiply the tens: Four 1's are 4, and 2 are 6. We write 6 in ten's place.
The car will run 68 miles on 4 gallons of gas.

$$\begin{array}{r} 17 \text{ miles} \\ \times 4 \\ \hline 68 \text{ miles} \end{array}$$

Tell how these numbers are multiplied:

$$\begin{array}{r} 23 \\ 5 \\ \hline 115 \end{array} \quad \begin{array}{r} 12 \\ 7 \\ \hline 84 \end{array} \quad \begin{array}{r} 63 \\ 4 \\ \hline 252 \end{array} \quad \begin{array}{r} 95 \\ 3 \\ \hline 285 \end{array} \quad \begin{array}{r} 15 \\ 4 \\ \hline 60 \end{array} \quad \begin{array}{r} 33 \\ 7 \\ \hline 231 \end{array} \quad \begin{array}{r} 59 \\ 2 \\ \hline 118 \end{array} \quad \begin{array}{r} 24 \\ 5 \\ \hline 120 \end{array} \quad \begin{array}{r} 16 \\ 5 \\ \hline 80 \end{array}$$

A Test in Multiplying

1. Multiply each number by 3. Then add 1.

3 5 7 2 9 6 8 4

2. Multiply each number above by 4. Then add 3.

3. Multiply each of the numbers by 5, and add 2.

4. Say the answers. Add 2; add 3.

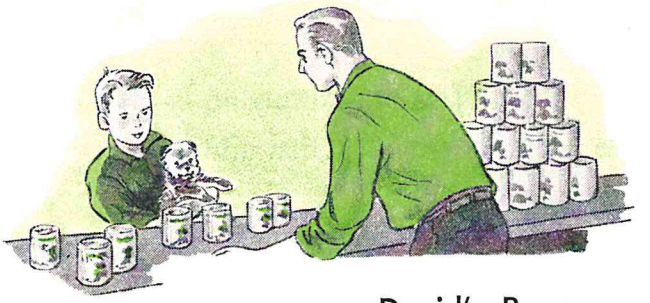
1 ×8	2 ×6	4 ×7	3 ×7	1 ×5	3 ×6	4 ×8	1 ×7	2 ×9
1 ×1	8 ×3	4 ×5	1 ×2	2 ×8	5 ×2	7 ×3	4 ×3	6 ×3
3 ×5	7 ×2	4 ×4	3 ×8	3 ×3	2 ×3	5 ×4	6 ×4	5 ×3

Multiply these numbers:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
5.	12 × 8	43 × 5	89 × 2	36 × 4	14 × 7	57 × 3	42 × 7	13 × 6	31 × 7
6.	23 × 9	12 × 5	51 × 4	59 × 3	47 × 4	32 × 8	15 × 2	32 × 7	79 × 3
7.	31 × 5	35 × 4	42 × 6	12 × 7	43 × 9	34 × 3	74 × 3	85 × 4	11 × 5
8.	23 × 9	24 × 8	29 × 4	38 × 4	34 × 9				
9.	14 × 9	14 × 8	18 × 4	19 × 4	39 × 4				

Carry 3 (tens)

14
×9
126



David's Puppy

1. David bought a puppy from Mr. West. Mr. West said that David could pay 75¢ a week for 4 weeks. How much did the puppy cost?

$$\begin{array}{r} \$\ .75 \\ \times\ \ 4 \\ \hline \$3.00 \end{array}$$

Put a cent's point and a dollar sign before the 75 to show that it is cents. Then multiply as with other numbers. Write the answer using the dollar sign and the cent's point.

2. David gave his puppy 1 can of food a day. David wants to buy enough food to last a week. How many cans should he buy?

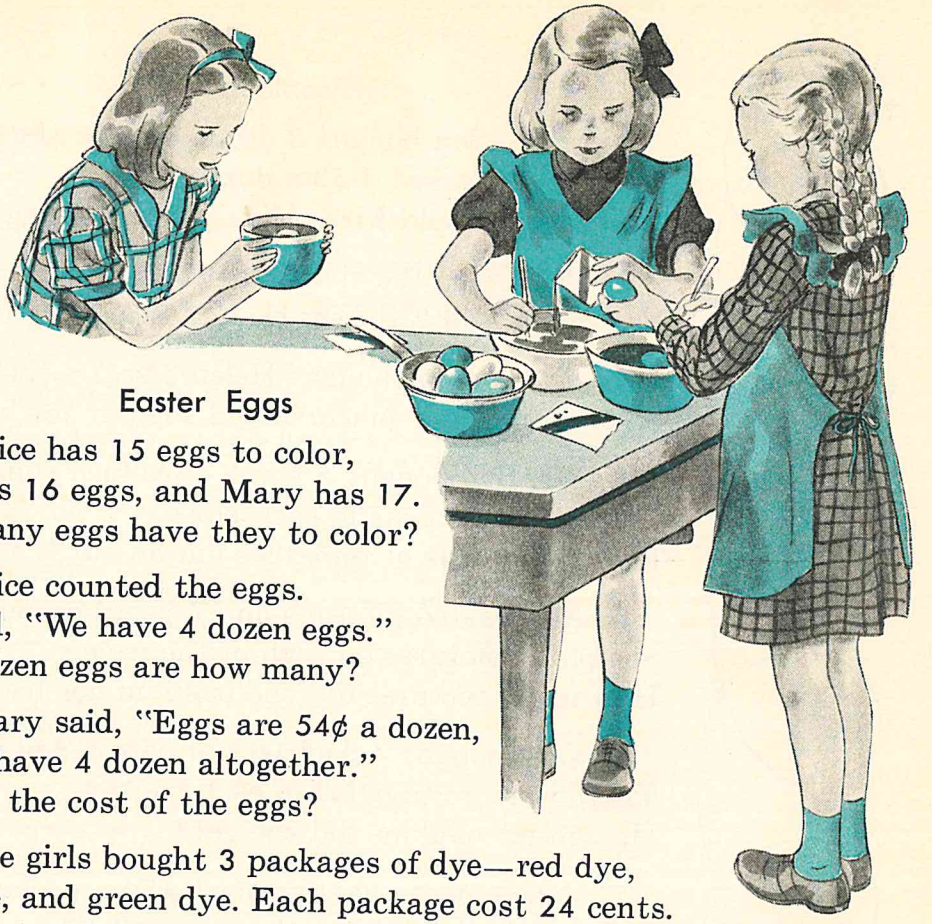
3. At 7¢ a can, how much will the food cost?

4. Say each multiplication. Then add 4, as: Nine fours are thirty-six, and four are forty.

4 ×9	1 ×3	2 ×4	4 ×5	6 ×3	7 ×2	4 ×6	3 ×8	1 ×9	5 ×2
5 ×6	2 ×5	1 ×6	4 ×6	1 ×8	4 ×3	1 ×5	5 ×3	1 ×4	3 ×2

5. Copy and multiply:

(a)	(b)	(c)	(d)	(e)	(f)	(g)
$.43 × 4	$.45 × 6	$.86 × 4	$.14 × 7	$.34 × 8	$.35 × 9	$.54 × 9



Easter Eggs

1. Alice has 15 eggs to color, Jane has 16 eggs, and Mary has 17. How many eggs have they to color?

2. Alice counted the eggs. She said, "We have 4 dozen eggs." Four dozen eggs are how many?

3. Mary said, "Eggs are 54¢ a dozen, and we have 4 dozen altogether." What is the cost of the eggs?

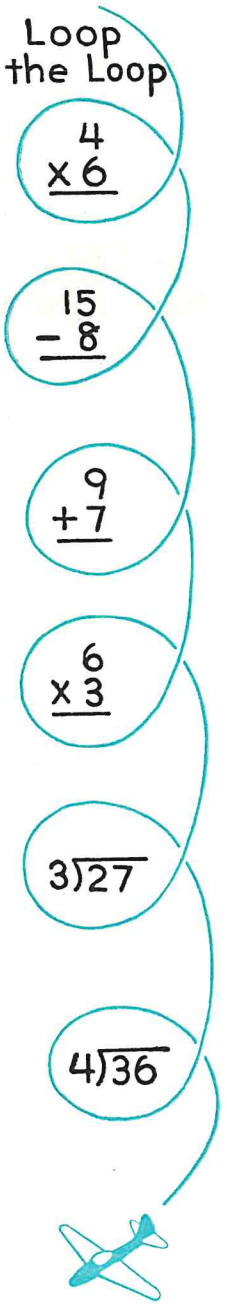
4. The girls bought 3 packages of dye—red dye, blue dye, and green dye. Each package cost 24 cents. How much did the dye cost?

5. Mrs. West said, "You girls spent $2.88 in all. So each of you should pay 96 cents as your share." Is each girl's share 96 cents?

You can multiply 96 cents by 3 and find out.

6. Copy and multiply:

(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)
$.56 × 4	$.45 × 9	$.54 × 8	$.85 × 5	$.35 × 7	$.15 × 8	$.98 × 4



Problems

1. Mrs. Allen bought 3 dozen eggs at the store. They were marked $.53 a dozen.
How much should Mrs. Allen pay for the eggs?

2. Tickets to the circus cost $.75 each.
How much will 2 tickets cost? 3 tickets? 4 tickets?

3. Mrs. Adams bought Helen 2 scarfs that cost $.98 apiece. How much should she pay for both?

4. Mr. Ben bought 5 boxes of canned tomatoes. There were 24 cans in each box.
How many cans of tomatoes did he buy?

5. Ann pasted pictures on 27 pages of her book. She put 4 pictures on each of the pages.
How many pictures did she paste in her book?

6. Jane bought 4 packages of paper napkins. There were 36 napkins in each package.
How many napkins did she get?

7. Jane's paper napkins cost 45¢ a package.
How much did the 4 packages cost?

8. Jim put 69 marbles into each of 4 bags.
How many marbles in all did he put in the bags?

9. Joe is going to Star City with his father. Star City is 58 miles from their home.
How many miles will they drive going to the city and back home?

10. Orange juice costs 14 cents a bottle.
How much should 8 bottles cost? 7 bottles?

11. Mr. Adams bought 6 books of bus tickets.
There were 30 tickets in each book.
How many bus tickets did he buy?

12. Mary and Sue made baskets with paper strips.
They used 64 strips for each basket.
How many strips should they cut for 2 baskets?
How many strips should they cut for 4 baskets?

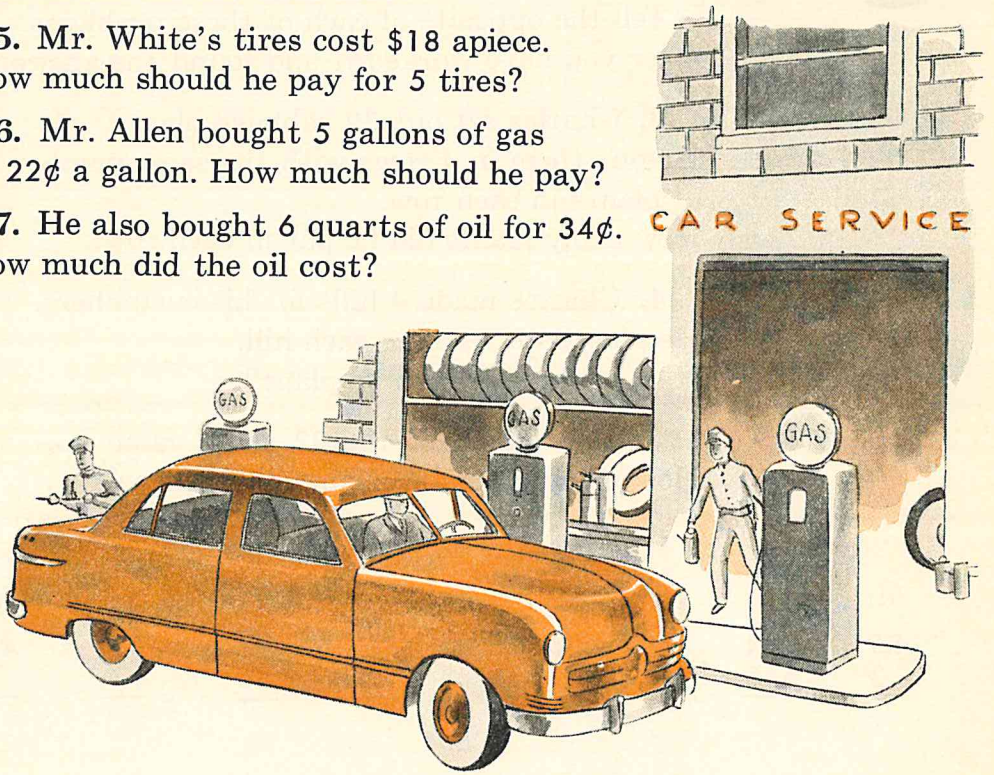
13. Bob has 8 rows of tomato plants in his garden.
There are 14 plants in each row.
He wants to tie each plant to a stick.
How many sticks does he need?

14. Mr. Brown bought 3 tires that cost $17 apiece.
How much did the tires cost?

15. Mr. White's tires cost $18 apiece.
How much should he pay for 5 tires?

16. Mr. Allen bought 5 gallons of gas
at 22¢ a gallon. How much should he pay?

17. He also bought 6 quarts of oil for 34¢.
How much did the oil cost?



Opposite Problems

1. Charles has a garden in his backyard.
He set out 18 tomato plants in his garden.
He put 9 plants in each row.
How many rows did he have?

Problem **1** is a division problem.

Problem **2** is the opposite of problem **1**.

It is a multiplication problem.

2. When Charles set out his tomato plants, he put them in 2 rows with 9 plants in each row.
How many plants did he set out?

Tell the opposite of each of these problems after you have worked it and found the answer:

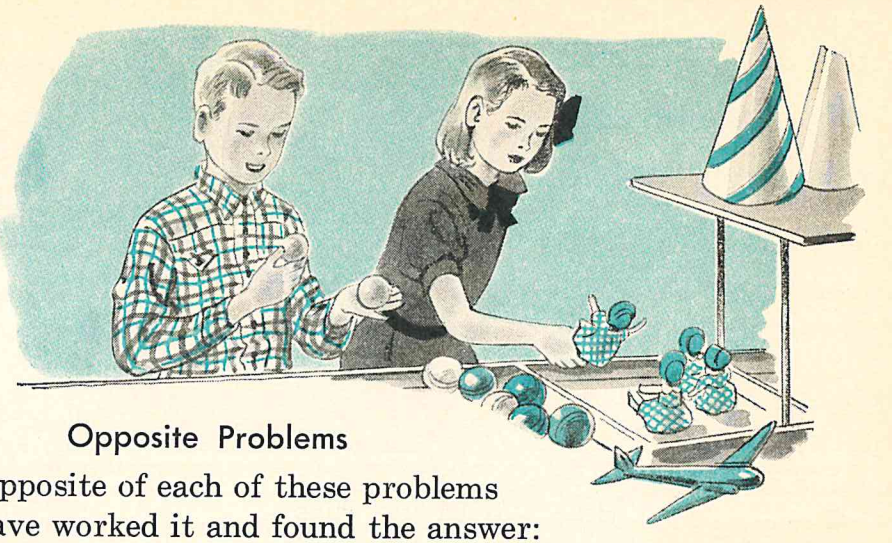
3. Charles set out 32 cabbage plants.
He put them in 4 rows with the same number of plants in each row.
How many plants did he put in each row?

4. Charles made 4 hills for his cucumbers.
He planted 8 seeds in each hill.
How many seeds did he plant?

5. One fourth of the 32 seeds came up.
How many cucumber plants did he have?

6. Copy and multiply:

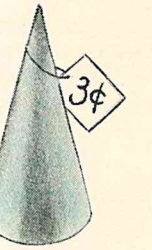
(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)	(*g*)	(*h*)
95	34	45	54	86	77	43	49
3	9	8	6	4	5	7	4



Opposite Problems

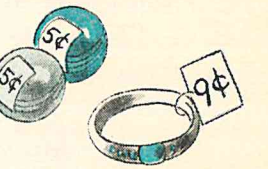
Tell the opposite of each of these problems after you have worked it and found the answer:

1. Tom and Mary went to the store to buy toys as prizes at the party they were going to have. Tom bought 6 dunce caps at 3¢ each. How much did he spend for them?



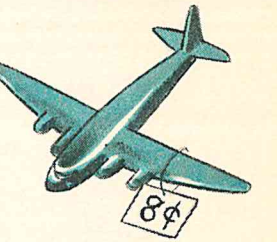
2. Mary spent 16 cents for china dolls. Each doll cost 8 cents. How many dolls did she buy?

3. Tom spent 40 cents for rubber balls. Each rubber ball cost 5 cents. How many rubber balls did he buy?



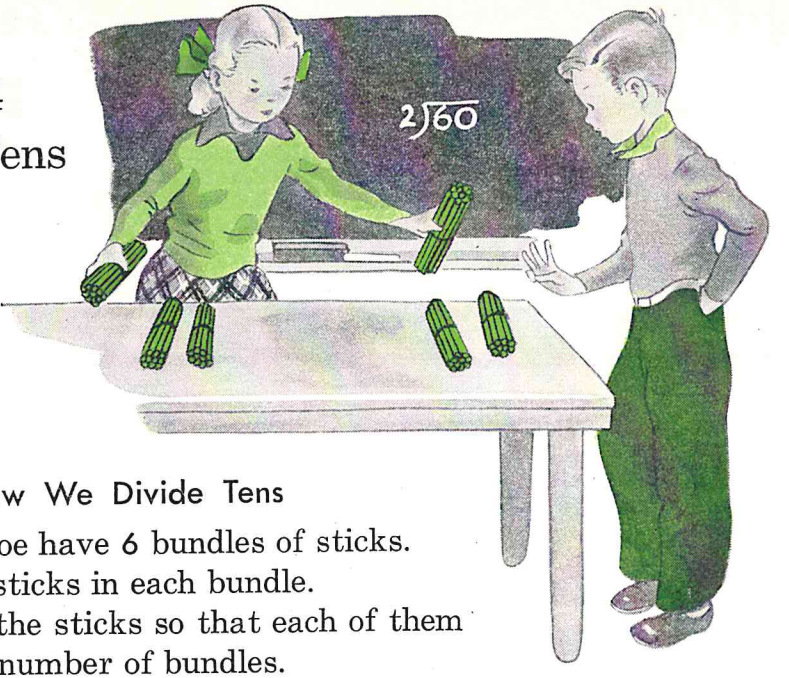
4. Mary bought 5 bracelets at 9¢ apiece. How much did she pay for the bracelets?

5. Tom bought 4 toy airplanes at 8¢ each. How much did Tom pay for the airplanes?



6. Tom and Mary charged each child who came to the party 3 cents to see the show that they had. They were paid 27¢ by the children who came. How many children came to the show?

Chapter 24
Dividing Tens

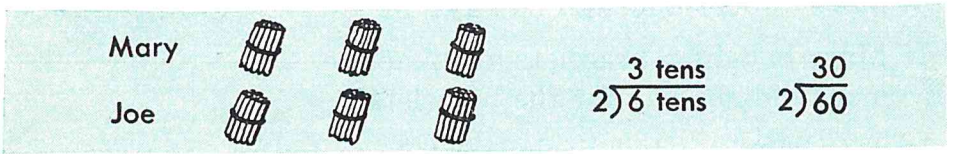


How We Divide Tens

Mary and Joe have 6 bundles of sticks.
There are 10 sticks in each bundle.
They divided the sticks so that each of them had the same number of bundles.

Mary took a bundle, and she gave Joe a bundle.
She took another bundle and gave Joe another bundle.
Then she took still another bundle and gave Joe a bundle.
That was all of the bundles.

"Now we each have three bundles," said Joe.
"We have divided the bundles equally."

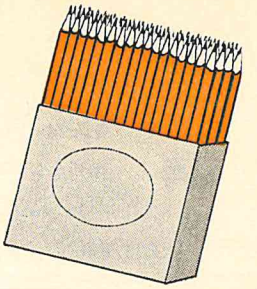


We divide tens the way we divide ones.

Tell how we divided these tens:

30	20	20	20	40	20
3)90	2)40	3)60	4)80	2)80	5)100
90	40	60	80	80	100

Dividing Tens and Ones



Miss Brown gave Joe a box with 86 pencils in it. She asked him to give 2 pencils to each child. To how many children can Joe give 2 pencils?

This is the way Joe found the answer:

86 is 8 tens and 6 ones.
Joe divided the tens first.
He got 4 tens.
Then he divided the ones.
He got 3 ones.
4 tens and 3 ones are 43.

$$\begin{array}{r} 4 \text{ tens} \\ 2\overline{)8 \text{ tens}} \end{array} \qquad \begin{array}{r} 3 \text{ ones} \\ 2\overline{)6 \text{ ones}} \end{array}$$

"I can give 2 pencils to 43 children," said Joe.

This is the way we write the division:

$$2\overline{)86}$$

1. First, divide the tens.
How many 2's are in 8?
Write 4 in ten's place in the answer.
Multiply: Four 2's are how many?
Write 8 under the 8 and draw a line.
We have divided all of the tens,
but we still have 6 ones to divide.

$$\begin{array}{r} 4 \\ 2\overline{)86} \end{array} \qquad \begin{array}{r} 4 \\ 2\overline{)86} \\ 8 \end{array}$$

2. Divide the ones now.
Bring down the 6. Write it below the line.
Now find how many 2's are in 6.
Write 3 in one's place in the answer.
Multiply: Three 2's are how many?
Write 6 under 6 and draw a line.
We have divided both the tens
and the ones.
The answer is 43.

$$\begin{array}{r} 4 \\ 2\overline{)86} \\ 8 \\ \hline 6 \end{array} \qquad \begin{array}{r} 43 \\ 2\overline{)86} \\ 8 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 43 \\ 2\overline{)86} \\ 8 \\ \hline 6 \\ 6 \end{array}$$

Dividing Tens and Ones

1. Mrs. White baked 96 cookies.
She wants to put the cookies into 3 boxes
with the same number of cookies in each box.
How many cookies should she put into each box?

$$3\overline{)96}$$

3 tens	2 ones
$3\overline{)9}$ tens	$3\overline{)6}$ ones
32	Check
32	32
32	×3
96	96

First, divide the tens.
How many 3's are in 9.
Three 3's are how many?
Now divide the ones.
How many 3's are in 96?
We multiply to check a division answer.
Three 32's are 96.
Our answer is right.

$$\begin{array}{r} 32 \\ 3\overline{)96} \\ 9 \\ \hline 6 \\ 6 \\ \hline \end{array}$$

2. Tell how we divide these numbers:

$$\begin{array}{r} 53 \\ 3\overline{)159} \\ 15 \\ \hline 9 \\ 9 \\ \hline \end{array} \qquad \begin{array}{r} 54 \\ 2\overline{)108} \\ 10 \\ \hline 8 \\ 8 \\ \hline \end{array} \qquad \begin{array}{r} 62 \\ 3\overline{)186} \\ 18 \\ \hline 6 \\ 6 \\ \hline \end{array} \qquad \begin{array}{r} \$\ .32 \\ 4\overline{)\$1.28} \\ 12 \\ \hline 8 \\ 8 \\ \hline \end{array} \qquad \begin{array}{r} \$\ .52 \\ 4\overline{)\$2.08} \\ 20 \\ \hline 8 \\ 8 \\ \hline \end{array} \qquad \begin{array}{r} 81 \\ 2\overline{)162} \\ 16 \\ \hline 2 \\ 2 \\ \hline \end{array}$$

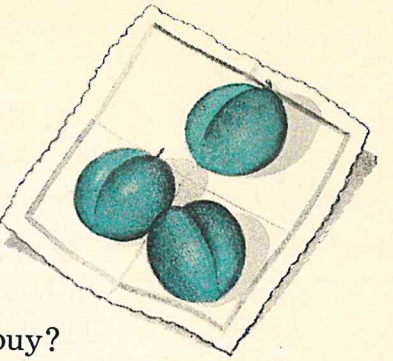
Write the cent's point in the answer in front of the number of cents. The cent's point is exactly above the cent's point in the number divided.

3. Divide these numbers and check each answer:

(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)
$2\overline{)106}$	$3\overline{)156}$	$4\overline{)168}$	$2\overline{)\$1.04}$	$3\overline{)\$1.89}$	$2\overline{)\$1.44}$

4. The Mothers' Club made 120 yards of cloth into dresses. Each dress took 3 yards of cloth. How many dresses did the club make?

Divisions for Ones



1. Ann has 3 plums.
To how many friends can she give 3 plums?
She can give 3 plums to one girl.
There is one three in three.

2. Pretend that you have 5 cents.
How many 5-cent ice-cream cones can you buy?

3. How many 2's are in 2? How many 8's are in 8?

4. How much is $\frac{1}{4}$ of 4? How much is $\frac{1}{3}$ of 3?

When we divide a number by itself, the answer is 1.

$$1)\overline{1}\quad 2)\overline{2}\quad 3)\overline{3}\quad 4)\overline{4}\quad 5)\overline{5}\quad 6)\overline{6}\quad 7)\overline{7}\quad 8)\overline{8}\quad 9)\overline{9}$$

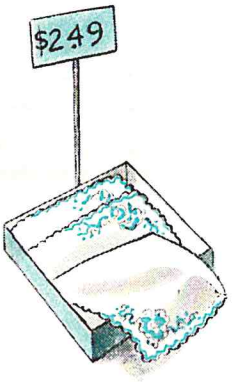
5. How do we divide these numbers?

$$9)\overline{9}\quad 9)\overline{90}\quad 7)\overline{77}\quad 4)\overline{164}\quad 4)\overline{84}\quad 5)\overline{105}\quad 4)\overline{48}$$

A Test in Dividing

(a)	*(b)*	*(c)*	*(d)*	*(e)*	*(f)*	*(g)*
$3)\overline{63}$	$4)\overline{84}$	$5)\overline{55}$	$2)\overline{62}$	$3)\overline{39}$	$2)\overline{86}$	$4)\overline{88}$
$2)\overline{168}$	$3)\overline{93}$	$4)\overline{124}$	$2)\overline{146}$	$7)\overline{147}$	$6)\overline{126}$	$8)\overline{168}$
$3)\overline{159}$	$2)\overline{88}$	$5)\overline{105}$	$5)\overline{155}$	$5)\overline{205}$	$9)\overline{189}$	$2)\overline{102}$
$7)\overline{217}$	$6)\overline{246}$	$6)\overline{186}$	$4)\overline{48}$	$8)\overline{88}$	$2)\overline{182}$	$4)\overline{204}$

Problems

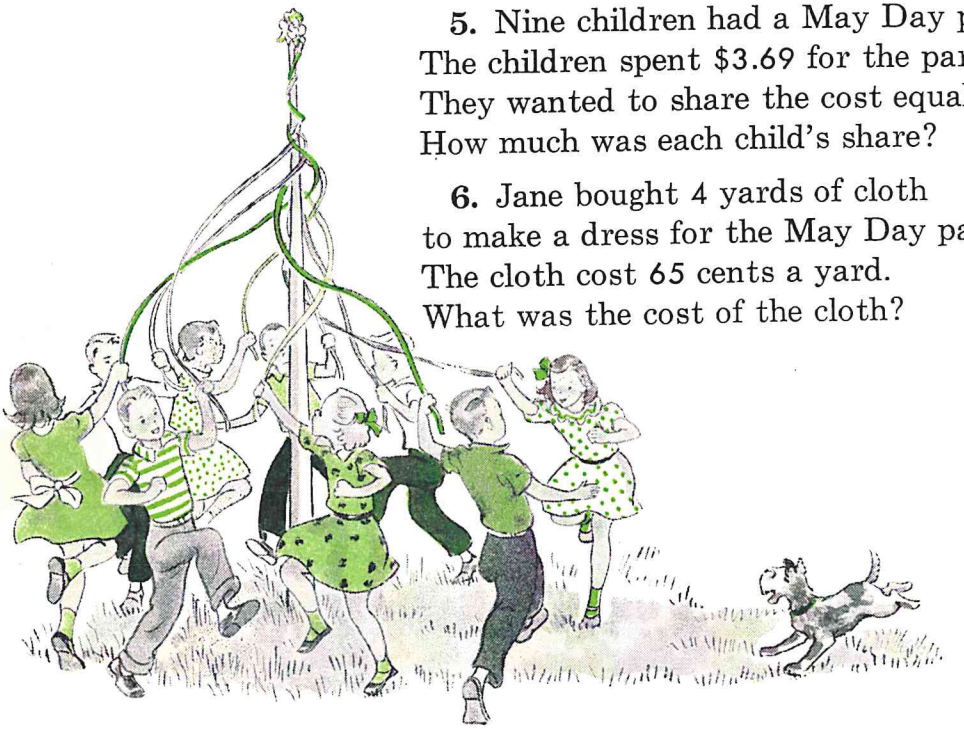


1. Sue paid $2.49 for a box of handkerchiefs for her mother. There are 3 handkerchiefs in a box. How much did each handkerchief cost?

2. Six children gave the same amount of money to buy Jim a book for his birthday. The book cost $1.86. How much was each child's share?

3. There are 328 Cub Scouts ready to march in the parade. There are 4 boys in each row. How many rows of boys are lined up?

4. The boys got 48 feet of rope to play cowboy. They cut the rope into 4 equal pieces. How many feet of rope were in each piece?



5. Nine children had a May Day party. The children spent $3.69 for the party. They wanted to share the cost equally. How much was each child's share?

6. Jane bought 4 yards of cloth to make a dress for the May Day party. The cloth cost 65 cents a yard. What was the cost of the cloth?

7. Jim pulled 32 carrots. He put them in bunches.
There were 8 carrots in each bunch.
How many bunches of carrots would there be?

8. Sue has 21 cakes to put on three plates.
How many cakes can she put on each plate
if she puts the same number of cakes on each plate?

9. Mary has a new book. If she reads 12 pages
each day, how many pages will she read in 5 days?

10. There are 72 pages in the book.
Will Mary read all of them in the 5 days?

11. A box of face soap cost $2.79.
There are 9 cakes of soap in each box.
How much did each cake of soap cost?

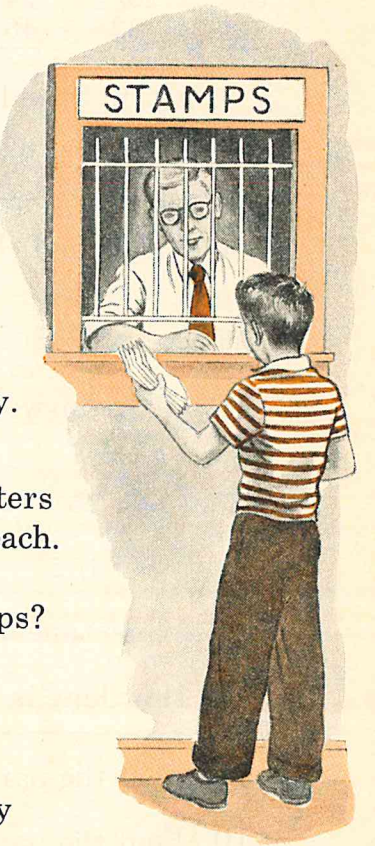
12. Jane got 20 pieces of red drawing paper.
To how many children can she give 5 pieces?

13. Four children paid $2.08 for a plant
for Miss Brown. They divided the cost equally.
How much was each child's share?

14. Jack's father asked him to take some letters
to the post office and get a 3-cent stamp for each.
He gave Jack $1.89. There were 63 letters.
Did Jack have enough money to buy the stamps?

15. Jack spent 25 cents for telephone calls.
He made 5 calls.
How much did each call cost?

16. Jane bought a bag with 30 pieces of candy
in it. How many children can she treat
if she gives each child 3 pieces of candy?



How Well Do We Remember? [Test]

1. Add and check each answer:

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
4	6	9	37				\$ .17
5	8	9	45	78	85	\$ .65	.39
3	5	8	18	56	47	.36	.45

2. Subtract and check each answer:

89	107	94	165	106	102	\$1.18	\$1.00
32	83	48	92	39	96	.79	.89

3. Multiply and check:

43	32	82	54	53	40	\$ .31	\$ .25
3	9	4	6	7	8	7	4

4. Divide and check:

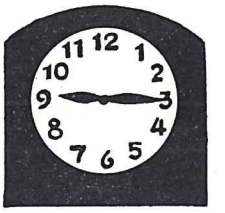
(a)	(b)	(c)	(d)	(e)	(f)	(g)
$6\overline{)186}$	$4\overline{)328}$	$3\overline{)279}$	$9\overline{)369}$	$3\overline{)156}$	$4\overline{)168}$	$5\overline{)205}$

Find the answers and check each one.

	(a)	(b)	(c)	(d)	(e)
5.	$\frac{1}{3}$ of 36	$\frac{1}{3}$ of 246	$\frac{1}{4}$ of 208	$\frac{1}{4}$ of 284	$\frac{1}{8}$ of 248
6.	$\frac{1}{5}$ of 105	$\frac{1}{5}$ of 155	$\frac{1}{6}$ of 186	$\frac{1}{7}$ of 287	$\frac{1}{9}$ of 279

7. What time does the clock show?

8. How long is the line below?



9. Find the part that shows one half.

10. Find the part that shows one third.

Problems

You will add, subtract, multiply, or divide to answer the questions in the problems below. Read each problem carefully to be sure you find what each question asks.

1. Mary's apron cost $.86, and her scarf cost $.75. How much did both of them cost?

2. Jim's shoes cost $3.95. How much change should he get from a 5-dollar bill? Draw pictures of the change and count it.

3. Tom's stamp book has 9 pages. He can put 24 stamps on each page. How many stamps can he put in the book?

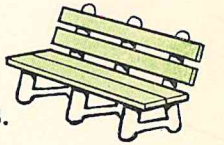
4. Each of the 29 children in Miss Brown's room at school needs 3 notebooks. How many notebooks should be bought by the class?

5. Three boys divided 159 marbles equally. How many marbles should each boy get?

6. Ann's allowance is 75 cents a week. How much should she get in 4 weeks?

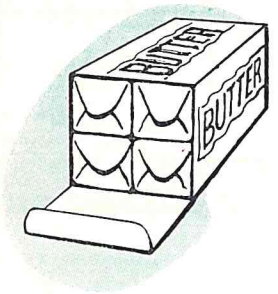
7. Betty wants to buy a book that costs $2.48. Her aunt will pay one fourth of its cost. How much will her aunt pay?

8. If 6 children can sit on a long bench, how many benches will be needed for 126 children?



9. It took Betty three times as long to read a story as it did her father. He read it in 18 minutes. How long did it take Betty to read the story?

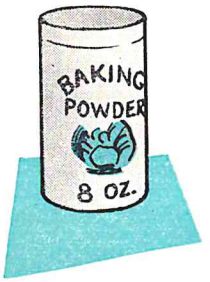
Problems



1. This pound of butter has been divided into 4 equal pieces.
What part of a pound is each piece?
How many ounces should each piece weigh?

2. Mary bought one half pound of tea.
How many ounces of tea did she buy?

3. Jane bought a can of pepper.
Near the bottom of the can she saw → $\frac{1}{4}$ lb.
How many ounces of pepper were in the can?



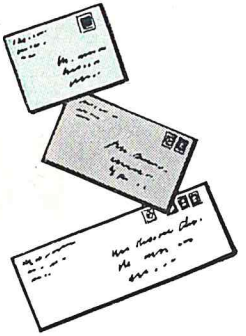
4. Is this can of baking powder heavier or lighter than a pound?
How much lighter or heavier is it?

5. Which is heavier, a 14-ounce loaf of bread or a pound loaf? How much heavier?

6. How much should 3 pounds of meat cost at 65¢ a pound? How much will 4 pounds cost?

7. Sugar costs 8 cents a pound.
How much will 3 lb. cost? 4 lb.? 5 lb.?

8. Jim weighs 69 lb., and Bob weighs 72 lb.
Which boy is heavier? How much heavier?



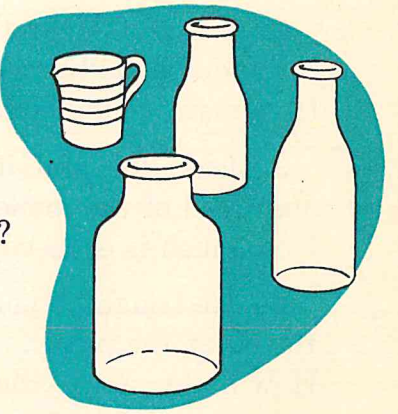
9. It costs 3¢ an ounce to send a letter by mail.
How much will it cost to send a 2-ounce letter?
How much will it cost to send a 4-ounce letter?

10. How many ounces less than a pound is a 12-ounce can of peas?

11. Alice paid 69 cents for 3 cans of peaches.
How much did each can of peaches cost?

About Measures

Pt. means pint.	Qt. means quart.	Gal. means gallon.



1. What part of a pint is a cup?

2. What part of a quart is a pint?

3. What part of a gallon is a quart?

4. How many cups are there in a quart?

5. What part of a quart is a cup?

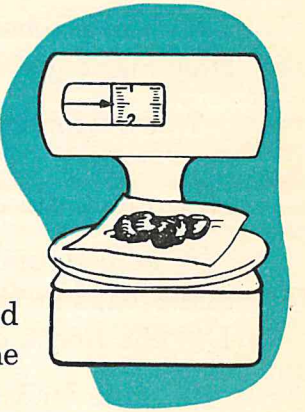
6. How many pints are there in a gallon?

7. What part of a gallon is a pint?

8. A glass holds about one half pint.
A quart of milk will fill how many glasses?

9. Mrs. Brown made 24 pints of strawberry jam.
This is the same as how many quarts of jam?

10. A milkman had 45 gallons of milk.
He poured it into quart bottles.
How many quart bottles could he fill?



11. There are 8 pints in a gallon.
How many pints are there in a half gallon?

12. Mrs. Allen canned 46 pints of peaches.
How many quarts of peaches did she can?

13. Jack asked the man at the store for a pound and a half of meat for his dog. The man put some meat on the scales and said, "This piece of meat weighs a pound and nine ounces."
Was that more or less than what Jack asked for?

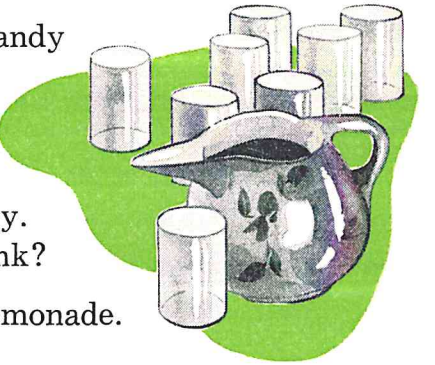
Problems

1. A ticket to the circus costs a grown person $1.20, but children under 12 years of age can get in for half price. Jerry is 11 years old.
How much should Jerry pay for his ticket?

2. A bag of sugar that weighs 100 pounds is divided equally among five women.
How many pounds should each get?

3. Jack, Joe, and Jim will each give one third of the money to buy a 90¢ book.
How much is each boy's share of the cost?

4. Joe bought 4 pounds of mixed candy to sell at the picnic.
How many ounces did he get?

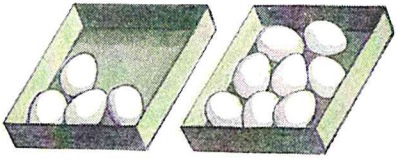


5. Joe had 50¢ in his bank.
He took out 35¢ to pay for the candy.
How much did he have left in his bank?

6. The pitcher holds 2 quarts of lemonade.
How many glasses is that?

7. On Monday Alice earned 10¢.
On Tuesday she earned 23¢ and on Friday, 47¢.
How much did she earn in the three days?

8. Alice found 4 eggs in the barn and 8 eggs in the henhouse.
Did she find a dozen eggs in all?



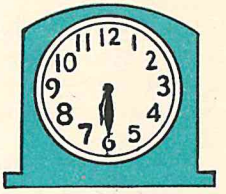
9. Jane made 6 jelly sandwiches and 8 peanut butter sandwiches.
How many sandwiches of both kinds did she make?

10. Jim counted 6 cars from Iowa, 3 from Ohio, and 4 from Texas. How many cars did Jim count?

11. Joe has 60 cents in his bank and 18 cents in his pocket. He earned 22 cents after school.

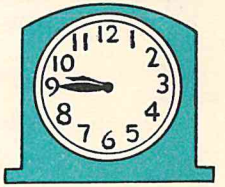
"Now," said Joe. "I can buy the airplane."
Does Joe have a dollar?

12. Sixty-one people rode the bus from town to the park, and 37 rode back.
How many people rode the bus that trip?



13. What is the difference in time between 12 hours and 6 hours?

14. What time does each clock show?



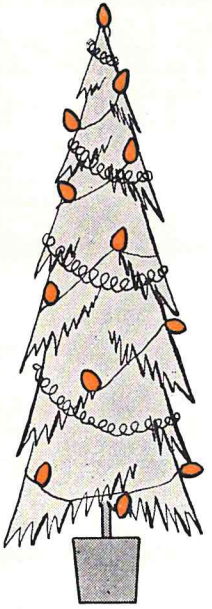
15. A dime is how much less than a quarter?

16. A quarter is how much less than a dollar?

Write the answers to these addition questions:

17.	7	9	3	4	4	6	5	5	9	8	4
	5	4	9	7	8	5	7	6	3	4	5
18.	7	9	8	6	7	2	8	6	6	3	3
	3	2	3	4	4	9	2	6	2	8	6
19.	7	5	8	7	6	9	8	8	9	8	2
	8	9	5	9	8	7	6	9	5	7	7
20.	6	8	6	9	4	9	9	5	7	7	5
	7	8	9	8	9	6	9	8	6	7	4
21.	2	3	2	5	2	5	2	4	2	1	4
	6	4	4	5	8	3	3	3	5	9	4

Problems without Numbers

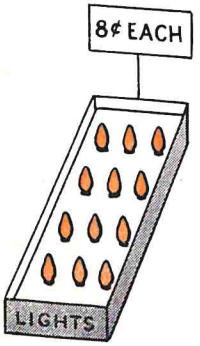


1. I know how many Christmas lights I need to buy and how much each light costs.
How can I find how much I must pay for them?

2. I know how many pennies I had in my pocket when I went to the store.
I do not know how many pennies I spent.
But I know how many pennies I have now.
How can I find how many pennies I spent?

3. I know how many marbles I had in my pocket when I left home for school this morning.
I know how many marbles I have now.
How can I find how many marbles I lost?

4. We live in a two-story house.
I know how many rooms are on the first floor and how many rooms are on the second floor.
How can I find how many rooms are in our house?



5. I know how many children want to go to the park in cars, and I know how many can ride in each car.
How can I find the number of cars they need?

6. I know how many jars I can carry each trip, and I know how many jars there are in all.
How can I find the number of trips I must make?

7. I know how many school days there are in a week.
How can I find how many school days are in 3 weeks?

8. I know how many dimes I have.
How can I find how many cents I have?
How can I find how many nickels I would have?

Problems

1. The boys are making animals for the zoo. They plan to make 6 deer, 4 lions, and 6 tigers. How many animals do they plan to make?

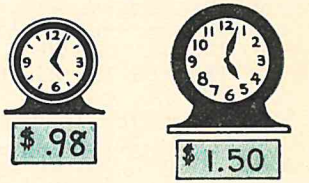
2. There are four boys making the animals. Each boy will make the same number of animals. How many animals will each boy make?

3. Jack measured a board. He found that he could make 4 animals from it. How many boards will he need to make 16?

4. The boards cost $.30 apiece. The boys used 4 boards. How much did the boards cost?

5. About how long is the pencil below?

6. What is the difference in the price of the two clocks?



Write the answers to the subtraction questions:

7.	14	11	16	12	13	18	11	14	11
	−5	−6	−8	−4	−5	−9	−3	−6	−7
8.	10	9	12	10	12	14	11	12	11
	−7	−2	−6	−3	−5	−8	−9	−3	−2
9.	15	17	11	13	14	15	13	15	13
	−6	−8	−5	−8	−9	−8	−4	−9	−6
10.	14	11	16	13	13	11	16	12	15
	−7	−8	−9	−7	−9	−4	−7	−9	−7

INDEX

Abacus, 66–71, 113–15, 152–54

Adding
- by endings, 184–86, 189–91, 193
- to 10, 36–51; to 18, 72–87

Addition
- carrying in, 198–211
- checking, 132
- column, 172–83, 187, 192, 196–97, 206–09
- eighty-one facts, 97
- meaning of, 24–27
- money, 208, 210, 302
- ones, 24–27, 36–51, 54–63, 137, 172–79, 187, 192, 202, 207, 210, 302, 307
- practice (oral), 25–27, 92–93, 97–98, 106, 128, 130, 184, 186, 189–91, 193, 199–200, 202, 208, 210
- practice (written), 40, 56, 60, 99, 105, 131–32, 135, 146, 161, 163, 170, 173–74, 177–81, 187, 192, 196–99, 201, 204–10, 259, 283, 307
- problems, 54, 129, 131, 133-34, 136, 162–63, 175–76, 178–79, 182–83, 185, 188, 192–93, 199, 201, 203–04, 207–09
- readiness for, 16–25
- and subtraction pairs, 42–51, 62
- tens, 72–78, 80–81, 90, 92–94, 97–99, 105–06, 128–37, 146, 160–63, 168, 170, 180–86, 188–91, 193, 196–211, 283, 302
- zeros in, 129, 160–61, 177, 197, 199

Analysis of groups, 16–23

Borrowing; *see* **Carrying: in subtraction**

Calendar, 117

Carrying
- in addition, 198–211
- in multiplication, 288–95
- in subtraction, 212–21

Change, counting, 123–24, 151

Comparing groups, 11–15

Counting
- by 2's, 3's, 4's, 5's, 222
- by 10's, 108–13
- groups of 4, 17; of 5, 18; of 6, 19; of 7, 20; of 8, 21; of 9, 22; of 10, 23
- hundreds, 152–54

Counting—*continued*
- money, 8, 13, 110, 112, 122–24
- practice, 5, 7–8, 10, 12–15, 17–23, 109, 222
- tallying, 15, 68–70, 113–15, 154

Dividing
- by 2's, 238–39, 250–51; by 3's, 236–37, 252–53, 261–63; by 4's, 254, 268–69; by 5's, 272–74

Division
- checking, 298
- for 1's, 299; for 2's, 241; for 3's, 261–65; for 4's, 268–70; for 5's, 272–75
- meaning of, 236
- money, 298
- ones, 236–47, 260–76, 278–83
- opposites, 260–63, 265, 270, 272–75
- pairs, 240–42, 270, 275
- practice (oral), 237–42, 245, 265, 296, 298–99
- practice (written), 276, 298–99
- problems, 239, 243–44, 282, 300–01
- tens, 296–302
- zeros in, 296

Dozen, 255

Finding the answer
- addition, 24–25, 90
- division, 237, 241, 245
- multiplication, 225, 234, 261–62
- subtraction, 28–31, 91

Foot, 118–19, 256–57

Fractional parts
- half a group, 250–51
- third of a group, 252–53
- fourth of a group, 254
- dozen, 255
- equal, 248–49
- inch, 256
- writing, 248–49
- yard, 257

Gallon, 305

Groups
- analyzing, 16–23
- comparing, 11–15
- dividing, 282
- equal, 222–24
- meaning of, 9–10

Hundreds
counting, 152–53
reading and writing, 154–59

Inch, 256

Measures
dozen, 255
length, 118–19, 216, 256–57
liquid, 258, 305
problems, 117, 119, 216, 255–57, 304–05
time, 117, 125–27
weight, 216, 259, 304
Money
addition, 208, 210, 302
coin values, 120-21
counting, 8, 13, 110, 112, 122-24
division, 298
multiplication, 287, 290-91, 302
practice, 120-22, 159
problems, 48, 53, 59, 63, 82, 85, 88–89, 96, 103–04, 129, 131, 133–34, 136, 139, 141–45, 149, 151, 163, 175, 178–79, 182–83, 185, 188, 197, 203, 208–09, 211, 227, 235, 239, 243–44, 246–47, 251, 266–67, 271–74, 279–81, 283, 285, 288, 290–93, 295, 299–301, 303–04, 306–07
reading and writing, 120–22, 159
subtraction, 214, 218, 302
Multiplication
carrying in, 288–95
counting by 2's, 222; by 3's, 222–23, 225; by 4's, 222; by 5's, 222
equal groups, 224
for 1's, 287; for 2's, 226; for 3's, 261–65; for 4's, 268–70; for 5's, 272–75
meaning of, 225
money, 287, 290–91, 302
opposites, 260–63, 265, 270, 272–75
pairs, 230–31, 233, 264, 270, 275
practice (oral), 222, 225–26, 228–31, 233–34, 264, 284–86, 288–90
practice (written), 277, 285–87, 289–91, 294
problems, 224, 227–29, 232, 235, 274, 285–86, 290–93
zeros in, 284
Multiplying
ones, 222–35, 260–75, 277–83
tens, 284–95, 302

Number cards, 57, 94–95, 276–77
Number stories, 12, 66–69, 113, 152–54
Numbers
meaning of, 8–10, 64–71, 111–15, 152–54
reading and writing, 8–10, 65–71, 110–16, 152–59

Ones
adding, 24–27, 36–51, 54–63, 137, 172–79, 187, 192, 202, 207, 210, 302, 307
counting, 4–23
dividing, 236–47, 260–76, 278–83
multiplying, 222–35, 260–75, 277–78
subtracting, 28–39, 41–51, 53, 55–63
Ordinals, 6–7, 177
Ounce, 259, 304

Pint, 258, 305
Pound, 216, 259, 304
Practice (*see also* **Addition; Counting; Division; Multiplication; Subtraction**)
mixed (oral), 36–39, 42–51, 73–74, 76, 80, 84, 86–87, 137, 260–61, 268–70, 273–75, 278, 283
mixed (written), 42–43, 46, 50, 56, 60, 62, 74–75, 77, 81, 86, 168, 302
Problems (*see also* **Addition; Division; Measures; Money; Multiplication; Subtraction**)
mixed, 55, 59, 61, 63, 75, 78–88, 96, 103–04, 148–51, 171, 211, 246–47, 263, 266–67, 271, 279–81, 283, 294–95, 303–07, 309
Problem-solving
classifying as "put-together" or "take-away," 54, 58
deciding on a process, 55, 88, 211, 246–47, 303
dramatization, 79, 85, 243
drawing pictures, 19–23, 33, 40, 42–43, 82, 270, 275
making problems, 58, 96, 167
opposite problems, 294-95
parts of a problem, 52
using pictures, 25–27, 29–35, 37–51, 53, 58–59, 75, 79, 82–83, 85, 88–89, 96, 119, 123–27, 129, 133, 139, 143, 145, 159, 172–73, 175–76, 178–79, 183, 188, 209, 214, 218, 224, 227–29,

Problem-solving using pictures—*continued*
235, 239, 243–44, 246–47, 249–57, 266–67, 272–73, 285, 295, 302, 307
without numbers, 308

Quart, 258, 305

Reading; *see* **Vocabulary**

Signs, 24, 28, 121, 225, 236

Situations, studying
buying and selling, 34–35, 48, 59, 63, 82, 89, 96, 104, 129, 133–34, 136, 139, 141–42, 145, 149, 151, 159, 162–63, 175, 179, 183, 185, 188, 203, 229, 243, 246–47, 266–67, 279–81, 283, 291–93, 295, 300–01, 303
counting change, 123–24, 151
dates, house and telephone numbers, 157–58
earning money, 88, 133, 139, 162–63, 209
making things, 79, 118, 238, 240, 242, 309
savings and thrift, 8, 85, 110, 183, 208, 244, 247, 267
scorekeeping, 177
sharing, 243, 250-54, 271, 299
telling time, 125–27, 209, 302, 307
using a calendar, 117, 182, 267, 279
using a foot ruler, 118–19, 256–57

Subtracting
by endings, 194–95
from 3 through 10, 36–51
from 11 through 18, 72–87
from hundreds, 217–21

Subtraction
and addition pairs, 42–51, 62
carrying in, 212–21
checking, 142
difference idea, 11–15, 79, 85, 89
eighty-one facts, 100
meaning of, 28–32
money, 214, 218, 302
number gone idea, 83
number needed idea, 82
ones, 28–39, 41, 51, 53, 55–63
practice (oral), 28–35, 41, 53, 100–01, 107, 138, 140, 194–95, 213–15, 217–18

Subtraction—*continued*
practice (written), 56, 60, 102, 105, 141–142, 145–47, 164–66, 170, 215, 217–19, 283, 309
problems, 53, 79, 82–83, 85, 89, 119, 139, 141–45, 166–67, 169, 216, 219–21
readiness for, 11–15, 28–29
remainder idea, 28–35, 53
tens, 72–89, 91, 95–96, 100–02, 105, 107, 137–51, 164–67, 194–95, 212–21, 283, 302, 309
zeros in, 139, 143, 164, 213–15, 217–18

Tens
counting, 108-10
meaning, 110-12
reading and writing, 113-16

Tests
addition, 136, 170, 181, 191, 207
comprehensive, 283, 302
diagnostic, 136, 151, 219
division, 245, 276, 299
multiplication, 234, 277, 289
self-test, 56, 60, 97, 100, 105, 137 202, 234, 245, 276-77
subtraction, 151, 170, 219, 283

Thinking the answers, 26-27, 32-35, 98-99, 101-02, 106-07, 264-65

Vocabulary
addition, 10–13, 24–26, 52, 93
division, 236, 238, 260–65, 296
fractions, 248–49
general, 59, 63, 150, 158, 167, 169, 171, 246, 250, 260, 274
measures, 117–19, 125–27, 216, 255–59
money, 120–21
multiplication, 225–27, 230–31, 260–65
number system, 8–9, 64–65, 67, 155
subtraction, 11–13, 28–29, 32, 52

Yard, 257

Zeros
in addition, 129, 160–61, 177, 197, 199
in division, 296
in multiplication, 284
as placeholder, 9, 70, 115, 154–55
in subtraction, 139, 143, 164, 213–15, 217–18